The West Midlands Economic Planning Council

THE WEST MIDLANDS
an economic appraisal

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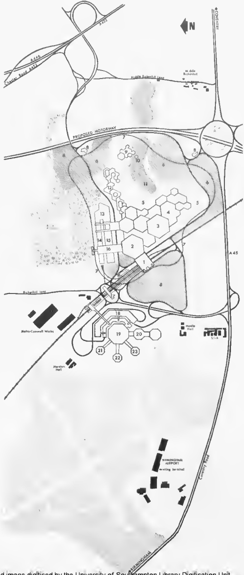
PROPOSALS FOR A NATIONAL EXHIBITION CENTRE AND AIRPORT BIRMINGHAM



1	Arrival
2	Concourse
3	Main Exhibition Hall
4	Minor Exhibition Areas
5	Outdoor Exhibition
6	Car Parking
7	Monorail
8	Petrol Station
9	Hotel
10	Church
11	Lake
12	Motel
13	Fire Station
14	Sidings
15	Workshops
16	Administration
17	Offices above Railway Station
18	Multi-Storey Car Park
19	Proposed Passenger Terminal
20	Service Building
21	Domestic Pier
22	International Pier
23	Freight Pier

Based upon a schematic map prepared by
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City Architect, City of Birmingham

TO THE CHAIRMAN OF THE WEST MIDLANDS ECONOMIC PLANNING COUNCIL

The West Midlands Economic Planning Council appointed us as a Working Party in December, 1968 to make an Appraisal of the economic prospects of the West Midlands Region and of the action needed to foster its growth. We have now completed the task we were set and submit our Report to the Council.

We trust that it will assist the Council in its role as advisor to the Government on matters of regional economic policy affecting the Region's future. Our Report contains a number of specific recommendations which we believe should be acted upon if the West Midlands is to make the most of its economic resources and opportunities in both the regional and the national interest. We hope our Report will be found to be helpful by the Government, the local authorities and industry itself, as well as by other bodies and organisations who are in a position to take action.

In carrying out our Appraisal we have greatly benefited by the assistance and co-operation of many representatives of industry and commerce in the Region, and our thanks are due to all those who have given of their time and effort to provide us with information and advice, whether in interviews or by the submission of written memoranda. We also gratefully acknowledge the help we have received from members of the West Midlands Economic Planning Board. The views and recommendations expressed in the Report are of course solely those of the Working Party.

As Chairman I also particularly wish to express my thanks to all the members of the Working Party who separately and collectively have worked hard over a long period to produce the report.

The work that has gone into this Appraisal will be well rewarded if it leads to action that will enable the West Midlands to play its full part in the economic life of the country in the years ahead.

(Signed) on behalf of the Working Party

G. A. H. Cadbury

Chairman

21 April, 1971

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CONTENTS

Page

Tables in the text ix
Illustrations xi
Appendices xiii

CHAPTER 1 Historical and Geographical Background 1
Definition of area 1
Geographical situation 1
Evolution of the region 3

CHAPTER 2 The West Midlands in the National Setting 4
The need and scope for a positive policy 4
Value of regional output 6
Implications for national policy 6
Other aspects of a positive policy 7
Conclusion 8

CHAPTER 3 The Employment Structure of the West Midlands 10
Employment 10
Location quotients 10
Occupational groups 10
Sub-regional employment 15
Activity rates 15
Pattern of unemployment 15
Net output 18
Earnings 18
Working population 18

CHAPTER 4 Industries—1 29
A. Construction 29
B. Bricks, pottery and glass 31
C. Agriculture 33
D. Food, drink and tobacco 35
E. Textiles 37

CHAPTER 5 Industries—2 38
A. Metal working industries 38
B. Metal manufacture 39
C. Engineering and electrical goods 40
D. Metal goods, not elsewhere specified 43
E. Vehicles and tyres 45

CHAPTER 6 The Service Industries 48
Present trends 48
Distributive trades 49
Insurance, banking and finance 49
Professional and scientific services 50
Miscellaneous services 52
Factors affecting growth 52
Economic balance within the Region 53

CHAPTER 7 Regional Resources 54
Water and sewerage 54
Transport and communications 56
Roads in the Region 56
Rail, passenger and freight 59
Journeys to work 59
Air services 62
Fuel and power 63
Education and training 63
Technological assistance 65
Small manufacturing firms 65
Environment 66

Page

CHAPTER 8 **Planning for Growth** 68
Regional development 68
A growth policy for services 73
New industries and the universities 75
Government and the Region 76

CHAPTER 9 **Conclusions and Recommendations** 78
Policy for the Region 78
Implementation 78
Summary of conclusions and recommendations 80

TABLES IN THE TEXT

Page
1 G.B. and W.M. % employed in manufacturing and services 6
2 Construction. Employment in the West Midlands 29
3 Houses completed—West Midlands 30
4 Size of construction firms 31
5 Bricks, pottery, glass. Employment in the West Midlands 31
6 Agriculture. Employment and basic facts—West Midlands 33
7 Cropping. West Midlands counties and England and Wales 33
8 Livestock units. West Midlands counties and England and Wales 34
9 Agricultural holdings—over 300 acres—West Midlands and England and Wales 35
10 Food, drink and tobacco. Employment in the West Midlands 36
11 Textiles. Employment in the West Midlands 37
12 Metal manufacture. Employment in the West Midlands 39
13 Metal manufacture. Employment in sub-regions of West Midlands—1969 39
14 Mechanical engineering. Employment in the West Midlands 41
15 Mechanical Engineering. Employment in sub-regions of West Midlands—1969 41
16 Electrical goods. Employment in the West Midlands 42
17 Electrical goods. Employment in sub-regions of West Midlands—1969 43
18 Metal goods. Employment in the West Midlands 44
19 Vehicles. Employment in the West Midlands 45
20 Motor cycle manufacture in U.K. 46
21 The service industries. Employment in the West Midlands 48
22 Professional and scientific services. Employment in the West Midlands 50
23 General practitioners (medical and dental) 1969 51
24 Miscellaneous services. Employment in the West Midlands 52
25 Expenditure on new and improved roads in the West Midlands 56
26 Road Research Laboratory 1969. Predictions for road traffic growth U.K. 59
27 International and domestic air passenger traffic 1969 62
28 U.K. terminal passenger average annual growth rates 62
29 Technological assistance—Government supported centres 65

ILLUSTRATIONS

		Page
	General reference map	Inside back cover
	The proposals for a National Exhibition Centre	Frontispiece
Figure 1	Sub-regional boundaries	2
2	West Midlands employment change, 1961–66; 1966–69	11
3	Employment changes 1959–69, males and females	12
4	Employment changes 1959–69, males	13
5	Employment changes 1959–69, females	14
6	Proportion of regional employment in the sub-regions, 1969	16
7	Regional employment, 1969	17
8	Sub-regional activity rates, 1966 and 1969	18
9	Wholly unemployed and vacancies, West Midlands, 1951–70	19
10	Wholly unemployed and vacancies, Great Britain, 1951–70	20
11	Net output for standard British regions	23
12	West Midlands distribution of net output in manufacturing industries, 1968	24
13	Hourly wage rates: United Kingdom and West Midlands, October, 1969	25
14	Hours worked per week by manual workers; United Kingdom and West Midlands, October, 1969	26
15	West Midlands projected home population	27
16	West Midlands projected home population by age groups	28
17	Passenger and goods transport in Great Britain	55
18	Road improvements 1946–70 and overloading 1969	57
19	West Midlands roads, programmed and future possibilities	58
20	West Midlands railways	60
21	West Midlands commuting to work	61

APPENDICES

I Working Party terms of reference and methods of working
II Working Party members
III Associations and firms contacted
IV Employees in employment by M.L.H. 1969
V Employees in employment by M.L.H. 1970
VI *Relationships between recent male employment and unemployment trends in the West Midlands
VII *A statistical analysis of employment changes 1961–66; 1966–1969

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* These two research papers were contributed by members of the Research Section of the West Midland Economic Planning Board and Department of Trade and Industry.

CHAPTER 1 HISTORICAL AND GEOGRAPHICAL BACKGROUND

1.1 In the summer of 1968 the West Midlands Economic Planning Council received from its then Chairman a paper entitled *The present and future role of the Economic Planning Council*. Its main recommendation was that the Council should 'examine the prospects for economic growth in the West Midlands and determine what action is necessary for the Region to play its full part in the economic development of the country; what balance of industrial and commercial development is required in the Region and what are its implications for employment, housing, land-use, communications, research, technology and higher education'. The Council accepted this recommendation and set up a Working Party to make an economic appraisal of the West Midlands. Its terms of reference and method of working are set out in Appendix I and the membership in Appendix II.

1.2 The Economic Appraisal is a pioneering work with all the advantages and disadvantages that this implies. No other region has carried out an industrial* survey in the same kind of way and we hope that it is an example that will be followed. We have been encouraged by the ready response we have received from all those whom we have asked for help and are extremely grateful to them.

1.3 As its name implies, the Economic Appraisal is not a study in depth, but an attempt to gather facts and informed opinion about the present economic situation in the West Midlands and the ways in which it might develop. An understanding of the present situation is essential to any conclusions or recommendations about the future. The findings of the Appraisal cannot be presented in precise quantitative terms, but its aim is to offer clearer alternatives than before to those responsible for forming economic policy.

1.4 To be of continuing value the Appraisal should be followed up at regular intervals, say every three years. It will gain in accuracy with repetition and its content can be refined in the light of the use that is made of it. If the facts are kept up to date and added to in the light of total planning needs, and if the recommendations are reviewed as circumstances change, it will provide a guide to the many regional economic decisions with which local and central Government will be faced in the years ahead. Meanwhile, a great deal of information has been collected for the Appraisal, which will be of use to all involved in the future of the Region. A need that our work has underlined is for a considerable improvement in the availability of regional economic statistics, preferably by the establishment of a data bank of regional information on a common basis.

1.5 We accept that economic policy is only a part of the physical and social policy for the West Midlands, but assumptions about the economic future of the Region are critical to other planning assumptions and form a starting point for a coherent regional plan. In the past, regional planning has concentrated more on physical than economic planning, partly because physical planning is a more developed art, and partly because of the lack of regional economic data to which we have already referred.

1.6 A practical problem that was raised at the outset was whether important economic decisions affecting the future of the Region, such as plans for rationalisation and major factory locations, might not be made outside either the West Midlands or indeed the country, and so be unaffected by regional considerations and frustrate attempts to foresee the way in which industry might develop within the Region. Our view was that, to the extent that such decisions were taken on economic grounds, they would be influenced by precisely those factors that we were appraising and that it was reasonable to assume that they would in general follow the logic of the regional economic situation. In addition, the more knowledge that was available on the economic environment of the Region the more informed would be the business decisions that affected it.

Definition of area

1.7 For the purpose of the Appraisal the standard West Midlands Region as defined in 1964 has been used, which covers the five counties of Herefordshire, Shropshire, Staffordshire, Warwickshire and Worcestershire. The Region can be said to be areas of economic and, to a large extent, social influence of the conurbation of Birmingham and the Black Country and of Coventry and North Staffordshire. The Region is divided into five sub-divisions, whose boundaries are shown in Fig. 1.

1.8 It is appreciated that the problems of the outlying rural areas of the Region, by which we mean not only Herefordshire and Salop, but also the rural areas of South Warwickshire and South Worcestershire, may seem to be very different from those of the industrial areas. Nevertheless, in our view the West Midlands Region should be regarded as an economic entity whose parts from the view-point of communications and population movement and growth, are interrelated. The total population is approximately 5 million, with over half of that number living in the conurbation and Coventry.

Geographical situation

1.9 The West Midlands has frequently been described as the hub of the industrial wheel of this country. In terms of history, it was the centre of the canal system; later it became a major centre of the rail system, linking the north-east and north-west with the south-east and south-west. Today, with the development of the national road programme, it is at the heart of the motorway network giving rapid access to all parts of the country. In this situation the comparison of the West Midlands to the hub of the industrial wheel would seem now to be even more appropriate.

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* Throughout the Appraisal the word 'industrial' is used in its widest sense to apply to every type of economic activity and not just to manufacturing. This is the sense in which the word is used in the phrase 'Standard Industrial Classification' which covers all forms of paid employment.

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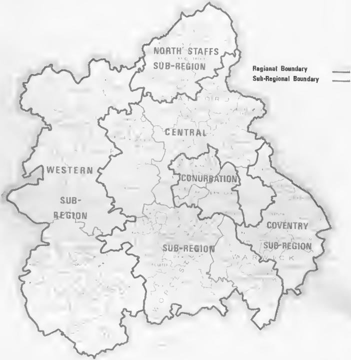
Fig.1

WEST MIDLANDS ECONOMIC PLANNING REGION

PLANNING SUB-REGIONS



See paragraph 1.7

W.M R.H.& P.O. D.O.E.

Evolution of the Region

1.10 Three factors explain the rise of the West Midlands as the industrial heart of the country. The first is the central position of the Region which has just been mentioned. The second is the exploitation of its natural resources such as water, iron-ore, coal and brick-clay. Thirdly the entrepreneurial outlook of its businessmen and the ability of its industry to adapt to the changing pattern of demand. As a result it is a region which has not suffered seriously from industrial depression and has built up a workforce of great skill and versatility.

1.11 The whole area was originally almost entirely agricultural land. Birmingham and Coventry both grew in influence as market towns, and, as early as the 14th century, because of their textiles. Walsall developed as a centre for the use of local hides, which were tanned into leather and used in a growing saddlery and harness trade. By the end of the 17th century, ironstone and coal working in the area were being exploited by small firms making locks, nails, needles and general smithsware, whilst further north the pottery industry was developing. It is at this stage that the Region began to build up its now considerable pool of skilled workmen particularly in metals. This skill was soon applied to brassware and toys and to more advanced products, such as guns. With the advent of the age of coal, iron and steam, and the immense improvement in communications with the canals and then the railways, coupled with the skills already in the West Midlands, there was an explosion of industrial activity. After the first World War the resilience of the Region and the innovative outlook of its businessmen was demonstrated by the rapidity with which the Region became a centre for the manufacture of cars and a whole range of consumer goods.

1.12 Parallel with, but always independently of Birmingham, Coventry had developed its technical skills and had moved from its large ribbon and silk weaving trade through clock and watch making, to sewing machines, cycles and then to machine tools, aircraft, electrical plant and cars. West Midlands industry has always adjusted quickly to new demands. Indeed this has probably been its greatest strength. Its central position in the economy has helped it to pick up early indications of pending changes in national and, for that matter, international tastes and preferences and translating them into marketable merchandise until the tag 'made in Birmingham' was known throughout the world. The Region has always been outward looking and was never a self-contained closed economy.

1.13 The continued growth of industry in the West Midlands and the variety of its manufacturing has resulted in a store of skills in the Region, which in turn has produced a workforce which is Midlands-conscious and confident in its abilities. There is a settled skilled population, which has its roots in the Region and does not intend to move. More than one manufacturer referred in the course of our interviews to the strength of this force compared with less stable workforces in other areas.

1.14 There are today widespread fears that the West Midlands, with its dependence on the metal-based industries and manufacturing in general, coupled with the number of small establishments, may be by-passed by the changes occurring in the organisational and technological fields and may not get its share of new industries. The effects of amalgamations and rationalisation in the Region must also be taken into account, together with the movement out of the Region of many company headquarters. In addition, there is the impact of automation and increased productivity on the demand and supply of labour in both qualitative and quantitative terms, and the implications of those factors on the training of labour, at management and shop floor level.

1.15 As we enter a new industrial phase marked by rapid changes in technology, the Council is concerned at the lack of clarity of the economic prospects of the Region and at the need for a positive attitude towards the development of the West Midlands. It is as essential from a national as from a regional point of view that the West Midlands should have a high level of economic activity and be capable of generating new employment and industry.

1.16 There will be a considerable increase in the population up to 1981 and beyond, and provision must be made for this increase, not only in physical and social planning terms, but also in the economic field. The increase in the population will place an additional burden on the regional economy and the range of employment opportunities must be adjusted to respond to the changed conditions.

CHAPTER 2 THE WEST MIDLANDS IN THE NATIONAL SETTING

The need and scope for a positive policy

2.1 A region cannot be viewed in isolation, it is not a separate country but a part of the whole. It is not yet even an administrative unit. Its industry and commerce are part of the industry and commerce of the United Kingdom, often organised and directed from outside the region or even the country. It is subjected to the same influences as the rest of industry and commerce and its prosperity and well-being both influences, and is influenced by, that of the country as a whole.

2.2 Yet each region has its own distinctive features. Geography and natural resources are specific to the region. Its industrial and commercial structure reflect these factors, the history of its development and the particular qualities and aptitudes of the population. The justification for dividing a country into regions, for purposes of study and policy formation, is that the region is large enough or distinct enough from other regions to be considered separately.* Because regions differ in many aspects the application of common national laws and policy has different consequences for each region. The object of an economic appraisal of any region must therefore be to identify these special features of the region which give it its peculiar character and to assess the significance of these features for purposes of policy for the region within the national setting.

2.3 A region cannot be considered in static terms. Change permeates all activities in a human society. What may have been true of a region in one period of its history may not be true now, and may be still less true in the future. Policies which are based on things as they were in a region may not therefore be relevant to things as they are likely to be. Policies must be attuned not only to the present but to the future in so far as this can be foreseen. The implications of current trends must influence policy in the present, if policy is to lead to desired results in the future and unless these implications are assessed the opportunity to influence the future of the Region will have passed us by.

2.4 All these generalisations apply to the West Midlands as much as to any other region. The fact that the Region is often classified as prosperous compared with other regions with higher rates of unemployment or lower incomes per head does not render a study of its prospects and problems any less important or relevant to national policy formation. As is pointed out in the O.E.C.D. study of regional policies in member countries,† 'It is important for regional policies to cover not only the problem area but also the expanding ones. Areas which are now prosperous may well show symptoms of depression in the future. In any case prosperous areas both have their own complex planning problems and influence depressed regions and also the economy as a whole.' There is therefore every reason to make an appraisal of the economic position of the West Midlands.

2.5 There are other cogent practical reasons for attempting to assess the Region's future prospects. With approximately 10% of the nation's population it is the centre of some of the country's major industries. Their efficiency and capacity for growth are a contribution to the industries of other regions. The Region produces not only for the home market, thereby contributing to import saving, but is also responsible for a significant proportion of the country's exports. Its central position astride the country's developing network of communications brings it closer to all parts of the country than is any other region, a factor which places its industries in an integral or interdependent relationship with the economy of the country as a whole. It is difficult to envisage the national economy expanding if the West Midlands economy stagnates.

2.6 Because it is thus, for national and historical reasons, a strong region in economic terms it is one of the sources from which support can be given to other parts of the country which are weaker. It is not the intention of the Working Party to question the rightness or wrongness of a national policy which is designed, by a variety of methods, to deal with any economic imbalance between the regions. West Midlands opinion, including that of the West Midlands Economic Planning Council, has in general accepted that it is in the national interest and that there are sound economic reasons for attempting to restore economic prosperity to regions where traditional industries have declined. All regions, for example, will gain from reductions in the differentials in the regional rates of unemployment, in order that central government may pursue a consistent policy of economic growth. What can, however, be said is that the ability of the country to cope with the problems of imbalance depends on the maintenance of the economic strength of the regions such as the West Midlands, which must be a net contributor to the resources which have to be provided for the purpose. The maintenance of the economic strength of the West Midlands is therefore essential if the country is to be able to deal with the economic weakness of less favoured regions. This is a further reason for ensuring that regional policies strengthen rather than weaken the economic foundations of the West Midlands.

2.7 To point to elements of strength in the West Midlands economy and to the contribution it can thereby make to the economy of the country and other regions is not to give a complete description of its economic structure, or to imply that it has no weaknesses or problems of its own. It is the purpose of the following chapters to describe the principal economic features of the Region in more detail. Some broad supplementary points can however be usefully made on the distinctive or particular features of the Region.

2.8 With over half its working population employed in manufacturing industry, the West Midlands is more heavily dependent on manufacturing than any other region. It is a region in which small enterprises as well as large play an important part and where, traditionally, the small firm has taken a lead in developing new ideas and techniques and translating them into practical manufactured products. The relation between such small and large enterprises is often one of interdependence, the former being a source of components and services for the latter. It follows that conditions which are unfavourable to the survival of small firms will affect the Region's industrial prospects and its capacity to continue its contribution to the national economy.

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* The West Midlands Region in 1969 had a greater population (5,145,000) than 57 of the 126 member states of the United Nations Organisation.

† 'The regional factor in economic development' O.E.C.D. 1970, p. 96.

2.9 Because manufacturing industry is so important within the Region, factors and trends which affect manufacturing industry as such can offer some guide to the course of events in the West Midlands. Perhaps its most significant feature is that the products of manufacturing can only be sold if they are directly competitive, in terms of price, quality and delivery, with equivalent products from elsewhere, both within the country and from abroad. The strength of any manufacturing economy depends on this competitive ability. No West Midlands industry is in such a position as to be sheltered from increasingly severe competition. The West Midlands is no longer the workshop of the world: it is one of many. The need to maintain its competitive ability is the paramount consideration; entry into the European Economic Community will only serve to add emphasis to this point. There are few, if any, products now produced in the West Midlands which are not produced in the other major industrialised countries of the world.

2.10 In consequence, the drive for increased efficiency, modernisation, re-equipment and lower cost production, to keep up to date with the latest techniques is not a matter of choice but one of necessity. Failure to accept the implications of this conclusion, or complacency based on past achievement, can only lead to a diminution of the traditional economic strength of the Region. This is a principle which needs to be realised by industry itself, by Government and by all those authorities and statutory bodies who are in a position to assist or impede the operations of industry.

2.11 There are many signs, as later chapters will show, that West Midlands industry is responding to the challenge of change but this response has its own consequences. It means that industry will require higher standards of qualification and training, as modern equipment and techniques demand more rather than less skill from management and men. The number of jobs however will not increase in proportion to output, since growth in output will largely depend on more investment in capital equipment and on making better use of buildings, plant and skills. Mergers and amalgamations are one of the results of this kind of drive for greater efficiency and they will affect the West Midlands as they will other regions.

2.12 The Region's dependence on manufacturing industry is important because in the country as a whole this sector is declining in employment terms in relation to the service industries. If the position in the U.S.A. is a guide to the future here, the proportions there in 1969 were Manufacturing Industry 26%, Services 64%.

2.13 The remaining sector, that of the primary industries, which includes agriculture and mining, is likely to continue to decline in employment terms. Therefore, if there are to be sufficient jobs for the population of working age in the years ahead, the service industries in the West Midlands will have to grow at least at the national rate.

2.14 The wide range of products made in the West Midlands can obscure the concentration within manufacturing industry which has important policy implications. Almost three-quarters of those employed in manufacturing are engaged in the production or use of metals, so that although they work in a large variety of firms and trades, they would all be directly affected by changes in materials technology which resulted for example in a faster rate of substitution of metals by plastics. The dependence of the conurbation and Coventry on the vehicle industry and of Stoke on the pottery industry needs no underlining. Finally the Region has a relatively small stake in the science-based growth industries, such as chemicals and advanced electronics. This shortage is at least in part a reflection of the policy of restraint on industrial expansion in favour of the assisted areas. The Region's limited share of the industries that could come into this category can be seen from the following location quotients:*

Chemicals and dyes	0·4
Pharmaceuticals and toilet preparations	0·1
Office machinery	0·5
Scientific instruments	0·3
Watches and clocks	0·3
Radio and other electronic appliances	0·4
Plastic moulding	0·9

The manufacture of computers is similarly under-represented.

2.15 Insofar as the industries on which the activities of the West Midlands are at present concentrated are particularly suited to the Region, they do not constitute an inherent weakness in its economic structure. Provided they remain profitable and competitive they are its strength and to some extent limit the scope for industries of a different character to establish themselves in the Region. This is however only true if the ability of the Region's industrial structure to adapt to change is not handicapped.

2.16 Another important feature of the West Midlands

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* For a definition of 'location quotient' see footnote to paragraph 3 6.

TABLE 1 G.B. and W.M. percentage employed in manufacturing and services

	G.B. percentage employed in		W.M. percentage employed in	
	Manufacturing Industry	Services	Manufacturing Industry	Services
1954	41·7	44·3	56·6	32·1
1962	38·7	48·7	53·9	36·1
1969	38·4	51·0	53·2	38·1

Source: D.E.

industrial and economic structure is its high degree of physical concentration in the great urban areas of which mention has already been made. Of these the dominant role of the West Midlands conurbation—Birmingham and the Black Country—has been frequently emphasised. Though manufacturing industry plays its part in the smaller towns it can be said that the concentration in the major urban centres is itself a reflection of natural economic forces which have been at work since before the Industrial Revolution. It follows that, for planning policy purposes, adequate attention must be given to the range of problems which face industry in these centres if the Region as a whole is to maintain its economic strength and vigour.

2.17 All these areas have their problems, of a kind which should not be overlooked simply because of the Region's relatively high level of economic activity. Much of its industrial equipment is housed in outdated, inefficient and unsuitable accommodation. Constant redevelopment and reconstruction is as necessary in this Region as elsewhere. Many areas important to industry are unattractive from a housing and amenity point of view, and the ability of the industries concerned to attract and retain managerial and skilled manpower of the high calibre required is, as many of the industrialists we consulted said, limited by these unsatisfactory conditions. The heavy concentration of industry serving the local, national and world markets imposes burdens on the communications system which, if not removed, will constitute a damper on future growth. By the same token, however, well-planned investment designed to overcome these difficulties can be expected to yield a higher return in economic growth in areas where industry is concentrated.

2.18 In these circumstances the planning solutions which are adopted can themselves have an important bearing on economic prospects. A solution which may be favourable from an amenity or environmental point of view may not be so favourable from the point of economic growth. For example, failure to improve the road communications within the West Midlands conurbation and the links between major centres may hold back growth by more than is gained by re-locating populations in areas where industrial growth is less likely. This is not to say that the development of the new and expanding towns may not be a better solution than the expansion of the major existing centres; only that the costs and benefits of alternative planning solutions must be weighed in terms of their influence on economic development and due regard paid to the economic forces at work. In short, the prospects for the West Midlands economy depend to a significant degree on how regional planning problems are themselves dealt with.

2.19 Finally, though stress has been laid on the importance of manufacturing industries it must not be thought that the future of manufacturing is the only issue confronting an economic appraisal. Agriculture, commerce, distribution and tourism all play an important part in the economy. Much of the Region consists of high quality and productive agricultural land, or of land serving the needs of recreation and tourism not only for the Region's population but for visitors from home and abroad. The Region has many historic towns, country homes and stretches of beautiful countryside. These are all assets of the nation and their proper utilisation, development and conservation are an economic as well as a social interest.

Value of regional output

2.20 It would have been helpful to have been able to establish some facts about the value of the output of the West Midlands, but the usefulness of the published net output figures* is limited, quite apart from their being out of date. The latest figures show that the net output per employee is on or slightly below the national average for all industries except textiles. What is not known is how far this is due to the mix of products made in the West Midlands, since the comparisons are made under wide industrial headings like pottery and motor vehicle manufacturing. If the figures were broken down into smaller categories they would be more meaningful.

2.21 The net output figures for the Region will also be reduced in value to the extent that components rather than finished products are manufactured. In addition it has been suggested that the high proportion of goods exported from the Region depresses the value figures, because exporting is on the whole less remunerative than manufacturing for the home trade.

2.22 The University of Birmingham, Department of Engineering Production is investigating under Government sponsorship output per head in the West Midlands engineering and metal working industries. Apart from considering alternative ways of measuring productivity, the conclusion of the first stage of the survey was that 'no evidence was found that "real" productivity was lower in the West Midlands than in other areas, although productivity in the industries studied was only half of what it could be'. Leaving aside what could be done in this and other regions by the better use of resources, the statement makes two important points. The first is that net output per head is not necessarily the same as productivity and, secondly, that there is no reason to believe that there is a specific problem of low productivity in the West Midlands.

2.23 Nevertheless it is important to know more about the value of the Region's output as a guide to future policy. Relatively low figures for the West Midlands could mean for example that the Region has not kept pace with technological change and has too high a proportion of old industries with low value products and insufficient advanced industries, the value of whose products per person employed is high and likely to be maintained through the growth of their markets. To have a basis for making this kind of deduction is of obvious importance to economic policy for the Region. It would also be useful to know how the Region stands in terms of capital per employee in comparable sectors of industry.

2.24 An improvement in value indices of output will require the co-operation of industry and government departments. It would be a worthwhile aim and we hope that the Birmingham University investigation will make recommendations to that end. Up-to-date figures based on sample surveys are of more practical use and more likely to be taken notice of by industry, than comprehensive statistics that are of historical interest by the time they are published.

Some implications for national policy

2.25 Enough has been said to establish the importance of the Region in its national setting and to bring out its main characteristics, some of which will be examined in greater detail in later sections of the report. Certain general observations can now be made on the implications of these features of the West Midlands in terms of national policies.

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* Report of the Census of Production.

2.26 First, a national economic policy which does not take account of the West Midlands economic potential and needs would be neglecting a major element in the nation's economy. Whilst it would not make sense to attempt to achieve equal growth rates everywhere or to ignore the disparities between different parts of the country, only a policy which is positive in its aims for the Region can ensure that the best use is made of its potential.

2.27 Neither national nor regional policy has till now been constructive in relation to the economy of the Region. Generally speaking national policies are based on national considerations and criteria and are not formed with reference to particular regions. They differ in the degree of impact they have on different regions; for example, changes in purchase tax rates and hire purchase regulations which affect the motor industry bear on all regions to some extent, but have a disproportionate effect on the West Midlands. Capital investment plans such as the road programme are drawn up on criteria which are applied across the country although their economic consequence will differ markedly between the regions. The rate at which housing, education and social facilities are developed are in turn a reflection of national and local policies rather than positive regional policies.

2.28 It is in the regional economic policy field however that a particular distinction can be drawn between positive and negative policies. From 1945 to the present regional economic policies have been primarily concerned with attempting to remedy the imbalance between the more and less prosperous parts of the country. The measures adopted have been, first, the provision of positive incentives, mainly in the manufacturing field, to industrialists to encourage the establishment of new enterprises in the assisted areas*. Second, the holding back of development in the more prosperous regions by the system of licensing applied to manufacturing establishments and offices. The first is a measure commonly applied by developed countries to meet their regional problems, the second has been taken considerably further in Great Britain than in any other country.

2.29 In detail the measures of both sorts have been changed from time to time. Recently, the present Government has substituted differential depreciation allowances for the previous system of differential investment grants. It has raised the minimum level for industrial development certificates and abolished, outside the South East, the office development controls. The most important control, that requiring industrial development certificates, is however still applied in cases of over 5,000 sq ft as a means of steering industrial expansion to the assisted and overspill areas.

2.30 In this framework the West Midlands is not, with the exception of Oswestry, a beneficiary of the regional incentive system and is, and has been for 25 years, subject to the negative restraint of the i.d.c. system. If there is to be regional economic planning across the country, then each region should have its appropriate policy. This will not simply be the policy that the region would choose for itself, since there is inevitably some conflict between regional and national interests. Within these overall policy limits, however, no region should appear to be being guided not by its own policy, but by the effects on it of policies designed for other regions.

2.31 The question that needs to be considered in the light of what has been said about the special features of the West Midlands is whether, given the need for a policy of dealing with the problem of the assisted areas, there is scope for a positive economic policy for the West Midlands. Our view is that such a policy is both possible and desirable along the following general lines.

2.32 A positive policy is essentially one which will help, rather than hinder, West Midlands industries to maintain their competitive capacity. A climate in which industry believes that the Government of the day is not favourably disposed to growth within the Region can and does act as a brake on industry's own attempts to make the best use of its opportunities. Criticism by industry within the Region of the negative aspect of regional policy has been continuous. The fact that this criticism persists is evidence that a new approach by Government to the progress of industry is vital if industry is to be encouraged in its efforts. A positive climate is also required if the most is to be made of the Region's economic potential. So long as the Government's attitude appears negative, industry, local authorities and statutory bodies will all feel inhibited from undertaking the developments which are necessary for an expanding regional economy.

2.33 The basic element of a positive policy is whether it answers the test; will the measure in question improve the capacity of West Midlands industry to survive in an increasingly competitive world? For example, modernisation and adaptation to new technologies and techniques are of vital importance in a world in which the West Midlands must compete with the massive growth of Japanese, American and European industry. Steering to the assisted areas, by controls, the growth which results from the pressures for modernisation may help to relieve the pressure on resources, particularly manpower, at times when there is strain on them in the West Midlands, but what is its cost? Whilst the balance cannot only be struck in economic terms, it must no longer be struck without evaluating the economic consequences.

Other aspects of a positive policy

2.34 It is a sound business principle to build on competitive strength. The economic strengths of the West Midlands include an adaptive industrial structure, skilled labour, an entrepreneurial tradition and good communications. Developments that make better use of these strengths should therefore be encouraged.

2.35 A positive policy would also be one which encouraged West Midlands industry to reinvest in new plant and processes and take advantage of technological change. If the development of new industry is to continue to be limited it is more than ever important that the industrial base should keep technically right up-to-date. Industry's ability to invest is governed by such considerations as profitability, market opportunities and the general economic climate, it is also a field in which the issues of fiscal and economic policy are national rather than regional in character. Nevertheless the Region is vulnerable to cyclical movements of the economy, because of its dependence on the engineering and vehicle industries. A positive economic policy for the Region would avoid accentuating these fluctuations by the use of economic regulators, which particularly bear on West Midlands industry. It is also more vulnerable to the level of international trade than it was when it weathered the depression of the inter-war years, because a higher proportion of its output is exported.

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* The assisted areas are the Special Development Areas, the Development Areas, the Intermediate Areas and (with assistance from its own Government) Northern Ireland.

2.36 It is not possible to assess the exact contribution that the West Midlands makes to the country's exports. Various responsible attempts to make such an assessment have produced figures as high as 40% by value. Whatever the true figure may be, there can be little doubt as to its being a high proportion. This underlines two points; the degree to which the U.K. balance of payments, and all that it means for national economic policy, depends on the maintenance of the competitive position of the West Midlands and the need once again to assess the Region's competitive ability in international terms and to appreciate how misleading a parochial comparison of its economic position relative to the rest of the country can be.

2.37 The next point to be taken into account in framing a positive economic policy is the prospect for employment in the Region. Although the West Midlands has in the past been a region with a low rate of unemployment in relation to the national average and with a shortage of labour, that shortage is largely one of specialised workers. The trend within manufacturing industry is for the proportion of skilled and qualified staff to increase at the expense of the less skilled. Administrative, clerical and technical staff formed 16% of the work force in manufacturing industry in 1948 and by 1970 that proportion had risen to 26·4%. The combination of more efficient methods of production and the swing towards capital intensive industries will accentuate this trend. Even now the usual comparisons which are made of rates of unemployment obscure the fact that the actual number of unemployed in the Region is high compared with some of the assisted areas.* There is therefore no guarantee that there will continue to be adequate opportunities for all sections of the workforce, particularly for less skilled workers and for women on the shop floor. Such opportunities as will exist may well depend on maintaining an adequate supply of skills within the Region.

2.38 The aim of a positive economic policy in relation to employment would be to provide not only enough jobs within the Region to meet the expected growth in population, but an adequate range of jobs in terms of skills and occupations. Such a policy would involve

- **a** sufficient economic expansion to offset the declining demand for labour through improved productivity and its substitution by capital;
- **b** maintaining the core of skills within the Region on which other jobs depend;
- **c** supporting educational and training facilities to enable those in the Region to make the most of their abilities and keep pace with the changing industrial structure.

2.39 One of the aims of a positive economic policy would be to encourage industry to make more intensive use of its existing fixed assets. A proportion of the industrial land and buildings in the West Midlands is at present under-used, and rationalisation and modernisation would improve efficiency, offer better working conditions and release land in and around the main centres of population which is badly needed for housing. Making the best use of land in the present industrial areas would mean that new housing could be provided without the increase in travel and other costs associated with overspill or commuter housing. It is common in industry to find that proportionately less plant is required when production lines are laid out afresh, particularly if this coincides with a move towards more continuous processes. This is due to improved techniques and higher unit outputs and also to the fact that the nature of the plant and its capital cost require it to be used intensively.

2.40 There could be a conflict between the aim of modernising the industrial base and so substituting capital for labour and the aim of increased employment opportunities. There is however a greater degree of community of interest between these aims than might appear on the surface. In the first place unless West Midlands industry remains competitive, the employment situation will be affected directly and adversely. Secondly, the more efficient it is, the better the case for allowing it the degree of expansion, including the introduction of new industries, it will require to keep pace with the demand for jobs. Finally, the need to use assets more intensively is likely to result in more shift working.

2.41 The reasons why the selective introduction of new industry should form part of a positive policy are twofold. In the first place it is a natural insurance against technological obsolescence. The dependence on metals technology and the vehicle industry need not pose a threat to employment prospects in the West Midlands even if substitution were to occur on a wide scale in either field, provided that the substitution occurred within the Region as part of the competitive evolution of the materials and transport industries. If, however, new developments were to continue to be discouraged in the Region then the present industrial structure of the West Midlands would give cause for concern.

2.42 The second reason why some new industry should be encouraged is that this Region is in a unique position to exploit new ideas and make the crucial transfer from the research stage to the marketing of the finished product. The claims of the Region in this respect in relation to the links between industry and the universities in the Region are considered in more detail in Chapter 8. In general terms however the past history of the Region, the skills of its labour force and its structure of small firms, all mean that it has a potential contribution to make to innovation which is at present unexploited.

Conclusion

2.43 It is therefore the clear view of the Working party that a positive economic policy for the Region is essential and that this need not run counter to the objectives of national policy. National policy towards the regions has the double aim of reducing regional economic differences and making better use of regional resources as a contribution to faster growth for the country as a whole. The approach to policy outlined in this chapter could be reconciled with both these aims. A faster rate of growth in the Region would be of direct benefit to the assisted areas, because the higher the rate of growth the more industry would be available to move to these areas and the more would be likely to do so for commercial reasons. There is also not necessarily a direct geographical connection between the point where growth takes place and the provision of jobs.

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* For example, in six of the nine years, 1962–70 (June), the absolute number of wholly unemployed was greater in the West Midlands than in Wales.

2.44 The objectives of the proposed policy would be first to maintain the competitive ability of the Region; secondly to make the most of the Region's economic potential, which means making better use of its assets, human and physical and thirdly to build on the Region's capacity to innovate. The test for the third objective is to ask whether this is a region in which a group of young men with a bright idea in a technical field would get every official encouragement to start and develop a new business? The depressing answer to this question, as things stand at present, emphasises the need for a constructive regional policy for the West Midlands.

CHAPTER 3 THE EMPLOYMENT STRUCTURE OF THE WEST MIDLANDS

Employment

3.1 In mid-1969 the West Midlands Region contained 9·52% of Great Britain's total population; 10·02% of the national work force; 13·9% of the country's total manufacturing employment and 20·1% of those employed in the metal using industries in Great Britain.
3.2 The West Midlands Region is the only British standard region having over half of its total employees in employment engaged in manufacturing industries. Of the 2,271,000 persons at work in the Region in 1969, 53·4% were in manufacturing (Great Britain 38·6%) whereas in service industries the converse held, 38·3% in the West Midlands Region to 51·3% in Great Britain. The Region has few people employed in the extractive industries (2·6%) and fewer than the national average in construction.
3.3 The manufacturing employment base in the West Midlands Region is concentrated around the four S.I.C.'s* covering the metal working industries, namely, metal manufacture (S.I.C. V), engineering and electrical goods (S.I.C. VI), vehicles (S.I.C. VIII) and metal goods, not elsewhere specified (n.e.s.) (S.I.C. IX). With 864,000 employees these account for 38% of the total regional employment (G.B. 19%) or 71% of total manufacturing employment. Since 1961 the proportion of people employed in manufacturing, including metal industries, has remained constant with a tendency to increase with heightened economic activity. The small increase in the proportion employed in services has tended to come from the primary and construction sectors.
3.4 In absolute terms regional employment reached a peak of 2,374,500 in 1966 at a compound rate of growth from 1961 of 1·2% per annum. Within this period male employment grew by 5·5% and female employment by 7·6%. The period represents a complete employment cycle and the growth industries in the West Midlands Region were widely spread (Fig. 2). Some thirteen industrial Orders had rates of employment growth above the national average figure. These expanding industries employed in total 58·1% of the employed regional labour force. Moreover, a further 23·2% were employed in industries which registered some growth. Spatially the employment change within the West Midlands Region has varied considerably both in total and by sex. Figures 3–5 illustrate this change over the years 1959 to 1969.
3.5 The contrast between 1961–1966 and 1966–1969 is sharp.† The West Midlands economy reacted rapidly to the downturn in the national aggregate demand in 1967 and although in 1968–1969 employment was stabilised, 1970 has shown a resumption of the decline. Male employment by 1969 had fallen to below that of 1961, although for females the fall was not so appreciable, reaching a level slightly under that for 1966. In this period only five industries showed any growth of employment, the most marked rise occurring in S.I.C. XXII, professional and scientific services (Fig. 2).

Location quotients*

3.6 The West Midlands has had a concentration of employment in those manufacturing industries which during the period 1961–1966 were the most rapidly expanding in the national economy. In the manufacturing sector seven out of the fourteen industry groups had concentrations in 1966 well above the national average, in some instances three and a half times higher. Based on location quotients none of the industries in the service sector had a concentration in the region which approached the national average. In this sector only professional and scientific services have increased concentration in the Region, insurance, banking and finance remained unaltered and public administration lost some ground. In manufacturing the largest increase in concentration was registered by metal manufacture (+0·1) and other manufacturing industries (+0·1). However, some of the industries with the highest concentration in the Region lost ground relative to Great Britain, mainly motor vehicles (−0·2), bricks, pottery and glass, (−0·2), metal goods n.e.s. (−0·1) and engineering and electrical goods (−0·1).

Occupational groups

3.7 In total, of the 26 occupational groups† in the West Midlands, 5 declined and 21 increased. The increases in the Region tended to be proportionately greater and the losses smaller than nationally.
3.8 Great Britain and the West Midlands between 1961 and 1966 show considerable changes in occupational groupings, both overall and within specific industrial orders. Generally, there were increases in white-collar occupations, service sector personnel and skilled craft engineers, while a decline took place in manual workers. In the same period the total of office jobs in all industries in the Region grew faster than national average (0·9% per annum as against 0·7% per

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* Standard Industrial Classification. Throughout this report references to S.I.C. and Minimum List Headings (M.L.H.) refer to the 1958 revised edition.

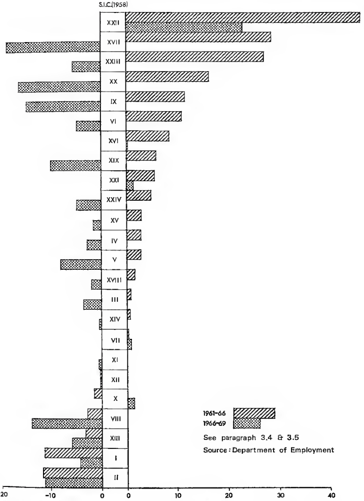
† To take into account the re-classification of a number of establishments which took place in 1966, the Department of Employment produced 2 sets of employment estimates for that year. The first set, on the old basis, is comparable with 1965 and earlier years and the second, taking account of the 1966 re-classifications, is comparable with 1967 and later years. Two series of employment figures are therefore used in the report, one runs from 1961 (in some cases earlier) to 1966 (marked 1966 (a)) and the other from 1966 (marked 1966 (b)) to 1969.

* A Location Quotient is the ratio between the proportion of an area's total work-force employed in a particular industry and the proportion of the Great Britain work-force employed in that industry. It indicates the degree of concentration of the industry in that area relative to the whole country. A location quotient of 1 shows the same average concentration in the West Midlands as in Great Britain. A location quotient greater than 1 shows a higher concentration, and less than 1 a lower concentration than average. (See Appendices IV and V).

† Occupational Groups are defined in *The Classification of Occupations, 1966* (H.M.S.O., 1966). An employee is assigned to an occupation classification solely according to the kind of work he performs. The nature of the factory, business or service in which he works has no bearing on the classification of his occupation except to the extent that it enables the nature of his duties to be more clearly defined.

Fig 2

West Midlands
EMPLOYMENT CHANGE
1961-66·1966-69



See paragraph 3.4 & 3.5

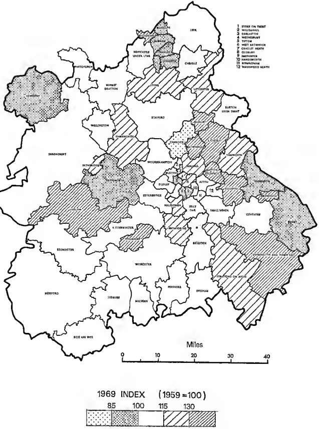
Source: Department of Employment

West Midlands Fig 3

EMPLOYMENT CHANGES 1959 - 1969

Males and Females

(By Employment Exchange Areas)



See paragraph 3.4

Source: W M E P B

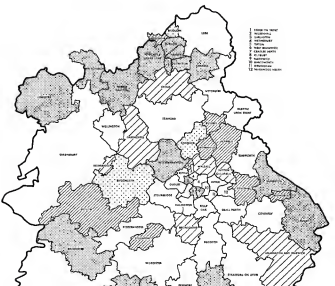
West Midlands

Fig 4

EMPLOYMENT CHANGES 1959 – 1969

Males

(By Employment Exchange Areas)



See paragraph 3.4

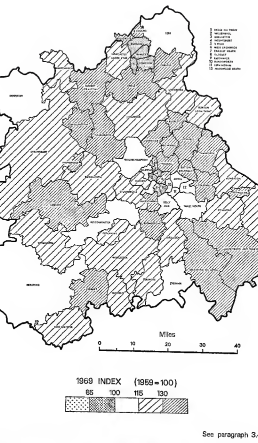
Source . W M E P B

West Midlands Fig 5

EMPLOYMENT CHANGES 1959-1969

Females

(By Employment Exchange Areas)



See paragraph 3.4

Source: W M E P B

annum). Growth in office jobs accounted for over half the increase in all occupations in the Region.

3.9 Managerial groups increased in nearly all industries in the Region, but unlike the national trend the West Midlands saw a decrease of this group in vehicles and public administration in spite of the overall increases in total employment in the latter. Scientists and technologists increased quite markedly in all industries in the Region, in particular electrical engineering. Following the national pattern clerical employees tended to increase in insurance, banking and finance. Most service industries registered some growth in employment, although in the manufacturing and primary industries there tended to be falls, the largest loss being in vehicles. Sales workers and other service occupations increased in the Region, particularly in the professional and scientific services and miscellaneous services.

3.10 In the West Midlands Region there was a noticeable increase in the classification, Metal Occupations, n.e.s., particularly confined to the engineering and metal working groups. By contrast, manual workers showed rather a sharp decline, especially in coalmining and agriculture, foundry and public administration. It is noticeable that approximately half the West Midlands industries lost manual workers.

Sub-regional employment

3.11 During 1961–1969 the conurbation accounted for the major share of regional employment (Fig. 6). It was the only sub-region to show a loss in absolute terms over that whole period, though for 1961–1966 its employment rose by some 60,000. This was off-set by a much larger loss in the period 1966–1969. Proportionately, the conurbation's share of regional employment fell consistently from 1961 to 1969. Of the other four sub-regions, only the Central sub-region showed a consistent rise in its absolute employment. The remaining three sub-regions showed absolute employment rises from 1961 to 1966, but none have shown an increase after this date.

3.12 Nevertheless, the sub-regional balance of employment varied. In 1969 the Western Counties was the only area with over 50% of its employed population in service industries (Fig. 7). In the Central sub-region services and manufacturing were about equal, but for the other three the balance was markedly in the direction of manufacturing. Moreover, as would be expected, the West Midlands has spatial concentrations of industry. The employment in North Staffordshire is heavily biased towards pottery and engineering and electrical goods; in the Coventry sub-region, motor vehicles, electrical and mechanical engineering and aerospace equipment. In the conurbation there is a concentration of all the metal using industries, such as electrical engineering, metal manufacture and small metal fabrication and vehicles. The proportion employed in professional and scientific services rose in all sub-regions between 1961 and 1969 with the largest rise occurring in the conurbation.

Activity rates*

3.13 Although there have tended to be regular fluctuations in activity rates in the West Midlands Region since the beginning of the 1960's, varying with movements in national aggregate demand, these rates have been at least several points higher than Great Britain for both sexes. The West Midalnds has the highest male activity rate for all standard regions in Great Britain, although since 1966 it has fallen below 80% for the first time. The Region also has the highest female activity rate.

3.14 The overall activity rates for the West Midlands conceal marked sub-regional variations for both sexes (Fig. 8). The conurbation has exceptionally high activity rates in marked contrast to those for the Central sub-region and Western Counties.

Pattern of unemployment

3.15 The West Midlands percentage figures for unemployment are only about half of those of Great Britain in times of high national aggregate demand, narrowing to 80% in periods when the demand is low, but the West Midlands economy reacts rapidly to changes in national demand patterns, both upwards and downwards, particularly for male employment.

3.16 Seasonal fluctuations in wholly unemployed and unfilled vacancies have decreased. The overall pattern for unemployment and unfilled vacancies in the Region is illustrated in Fig. 9 and for Great Britain in Fig. 10. The total unemployed measured in absolute terms in the Region has been rising throughout the period from 1951, with a tendency for the base of each unemployment cycle to be higher in the numbers of unemployed. At the same time, the number of vacancies has not varied greatly in the pattern of its fluctuations, i.e. when the national economy is buoyant a severe shortage of labour and, in the reverse situation, only a small difference between the theoretical demand and supply of labour.* However, different patterns emerge for males and females. For males there is a tendency through time for unemployment to increase and the cyclical fluctuations to get more severe in character. In the latest period of relatively high unemployment, from 1967 to 1970, the number of vacancies has remained higher than at similar times in earlier cycles. Proportionately, more of the unemployment is falling upon the registered unskilled labour. Since 1966 unemployment in the West Midlands has worsened relative to Great Britain as a whole and had the regional wholly unemployed figures for June followed the trend for Great Britain, the West Midlands would have had some 11,000 fewer wholly unemployed males in 1970. Yet in the key metal working industries, unemployment is lower than would be expected.

3.17 Only in 1958 to 1959 has the number of registered female vacancies ever fallen below the number of registered female unemployed. However, in the period 1966 to 1970, the female unemployed position in the West Midlands Region has worsened relative to that of Great Britain by some 1,700 jobs.

3.18 Of concern is the type and duration of the unemployment. In June 1970, over half the male unemployed was in the 18–24 and the over 55 age groups. For male unemployment in general, 51% were unemployed for a period in excess of 13 weeks, including 15% unemployed over 12 months. But the lengthening of the duration from 1961 is most marked in the over-55 age group, where by 1970 nearly two-thirds were out of work longer than 3 months, and a quarter for over a year.

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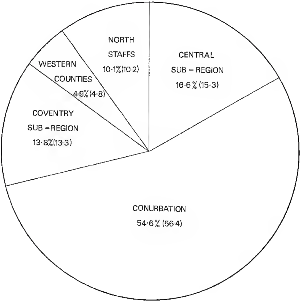
* The definition of activity rates is the number of employees (employed and unemployed) expressed as a percentage of the home population aged 15 and over.

* It is estimated, conservatively, that notified vacancies need to be increased by more than 60% to obtain the true level of vacancies which exist in the economy.

PROPORTION OF TOTAL REGIONAL EMPLOYMENT IN THE SUB-REGIONS 1969

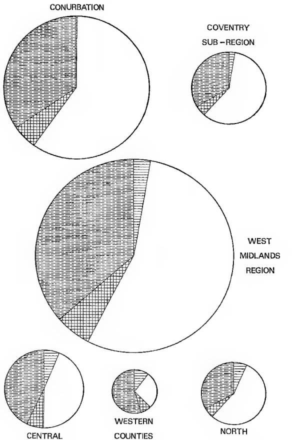
(Figures in brackets - 1961)



See paragraph 3.11
Source : WMEPB

Fig 7

REGIONAL EMPLOYMENT 1969

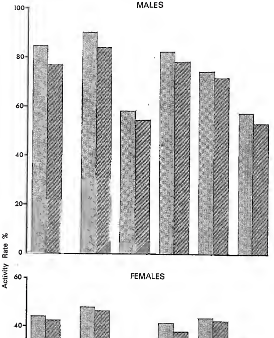


Areas are proportional to the number of employees

See paragraph 3.12
Source: WMEPB

Fig 8

SUB-REGIONAL ACTIVITY RATES
MALE AND FEMALE, 1966 AND 1969



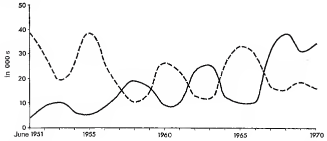
See paragraph 3.14

Source: WMEPB

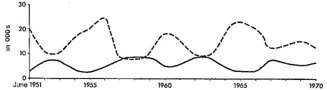
West Midlands Fig 9

WHOLLY UNEMPLOYED AND VACANCIES
1951 - 70

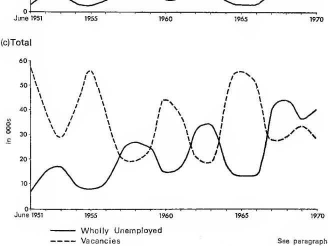
(a) Males



(b) Females



(c) Total



See paragraph 3.16

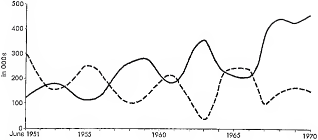
Source W M E P B

Great Britain
Fig 10

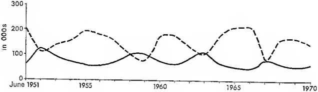
WHOLLY UNEMPLOYED AND VACANCIES

1951-70

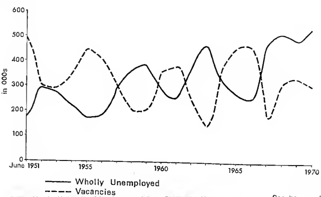
(a) Males



(b) Females



(c) Total



See paragraph 3.16

Net output

3.19 Between 1958 and 1968, the West Midlands Region doubled the value of its net output in manufacturing industries (Fig. 11). Net output value emphasises the West Midlands intermediate position in the British economy, along with the North West, wedged between an accelerating South East and the other regions. The South East is drawing away from all other regions, whilst the West Midlands is also widening the differential with other regional economies.

3.20 The West Midlands percentage share of value of manufacturing net output increased between 1958 and 1963, but levelled off in the period to 1968, by which date it contributed 13·6% in value to Great Britain net output. Five manufacturing industries in the Region contributed 18% or more of the total industry value for Great Britain as a whole—metal manufacture (24%), vehicles (26%), metal goods, not elsewhere specified (31%), bricks, pottery, glass, etc. (18·4%) and other manufacturing (19·4%). The West Midlands Region leads in the value of net output in metal manufacturing and metal goods not elsewhere specified, whilst in vehicles, other manufacturing industries and mechanical engineering (13·1%), it ranks only behind the South East.

3.21 The West Midlands Region is clearly dependent on the value of net output in four major industries for continued growth and prosperity—engineering and electrical goods (£486·8m); vehicles (£426·2m); metal goods, n.e.s. (£309·8m) and metal manufacture (£263·5m). These four industries alone accounted for 69·3% of the total regional value of manufacturing industry in 1968 (Fig. 12). Additionally, these four registered the largest absolute change in value between 1958 and 1963 and 1963 and 1968. Eight West Midlands industry groups increased their percentage share of the Great Britain net output between 1958 and 1968.

3.22 Net output per head figures must not be taken as a measure of productivity. They are the crude figures of output divided by numbers employed whether full-time or part-time. The West Midlands Region appears to have a low value in net output per head and is below Great Britain in most manufacturing groups. The position seems to have altered little since 1958. However, variations in net output per head between the regions can arise from differences in such factors as product mix, industrial structure, employment structure, degree of technological progress and amount of capital per employee.

Earnings

3.23 Using the New Earnings Survey of the Department of Employment based on April 1970, the average weekly earnings for full-time men aged 21 and over in the Region (£30·90) were second only to the South East (£32·60), while those for women (£15·70) were below those for Great Britain as a whole (£16·30). Between the sub-regions of the West Midlands there are large differentials for men, the widest being £8·40 between Coventry Sub-region (£34·40) and the Western Counties (£26·00). For women, however, differentials are much narrower, the widest being only £1·20 between Central Sub-region (£16·20) and North Staffs (£15·00).

3.24 The average gross hourly earning in the West Midlands for full-time manual men* at 62p is higher than in any other region due to the hourly rate in manufacturing industry (66p). The South East (55½p) has higher rates in non-manufacturing industry (W.M.R. 54½p). This pattern is not followed in the non-manual sector, where the West Midlands figure for all industries and services (90p) is below that for the South East (98p). Male manual earnings in the West Midlands are on a gross hourly basis, the highest in the country in electrical engineering, vehicles, metal goods n.e.s., other manufacturing, miscellaneous services and public administration. Female manual earnings (35p) are lower than for the South East (35½p) but above Great Britain (33½p).

3.25 The sub-regional pattern within the West Midlands varies. Full-time manual men in the Coventry Sub-region (72½p) and the conurbation (63½p) have the highest average gross hourly rates of all sub-regions in Great Britain, whilst the Western Counties (49p) has one of the lowest.

3.26 Hours worked in industry have a bearing on total weekly earning, but figures for non-manual workers are unavailable. For men manual workers (accounting for over half of the male West Midlands work force) the average hours worked in October 1970 were the lowest of all regions. Average hours worked in manufacturing were 43·8, and in all industries 44·6. The industries with the lowest hours worked tended also to be those with the highest hourly rates. (Rates for 1969, the latest year for which they are available on the 1958 S.I.C. basis, are shown in Figs. 13 and 14.)

Working population

3.27 The projected population of working age in the West Midlands Region will rise by 140,000 between 1971 and 1981; this follows the expected national trend. However it is unlikely that the level reached in 1967 will be attained again at least until the end of the 1970's. The actual working population 1971–1981 will be affected by two main factors, immigration which is taken into account in the projection and the raising of the school-leaving age which is not. There is also the possibility that people may go on working longer but this would be unlikely to have much affect in the period under consideration. The most questionable assumption in the official projections is that there will be net emigration from the Region at the rate of 8,000 per annum 1971–1981. This assumption contrasts with the net addition to the population of 42,000 as a result of immigration 1961–1969.

3.28 Three components contribute to population projections, namely the birth rate, the death rate and migration. Whilst the death rate changes slowly, the other factors are subject to economic and social pressures. As will be seen from Fig. 15 there has been a downward trend in the population projections and the Registrar General has assumed that the Region will experience a net outward migration because of a smaller level of commonwealth immigration compared with preceding years and the effects of Government regional policy. It will be seen from Fig. 16 that though there is an increase in the population of the Region there will not be any significant change in the age composition, the small increases in the working population take no account of the raising of the school leaving age nor of the tendency for more people to undertake further and higher education. These two factors will depress the size of the employable population.

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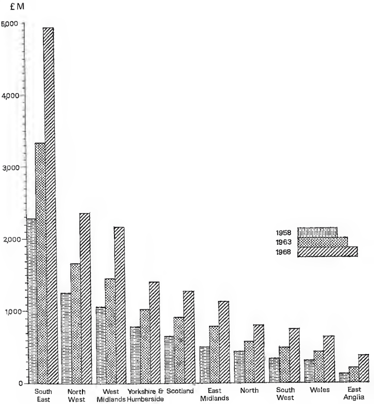
* A definition of full-time manual men is all male workers aged 21 and over not technical, managerial or clerical.

3.29 The aim of this chapter has been to consider the Region as a whole in employment terms and give as comprehensive a picture as possible of its employment structure. In the following three chapters we look at the regional economic situation on the basis of the individual industries that are located in the West Midlands.

NET OUTPUT FOR STANDARD BRITISH REGIONS



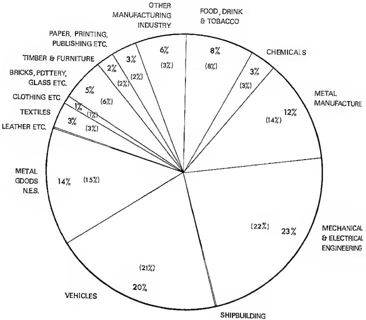
See paragraph 3.19

Source: B.O.T. Journal 2·9·1970
Census of production
1963, pt.133 (1970)

Fig 12

West Midlands
DISTRIBUTION OF NET OUTPUT IN MANUFACTURING INDUSTRIES 1968

1958 Distribution shown in brackets



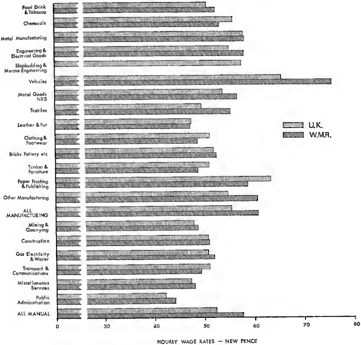
See paragraph 3.21

Source: B.O.T. Journal 1970

Fig 13

HOURLY WAGE RATES FOR MANUAL WORKERS UNITED KINGDOM AND WEST MIDLANDS OCT. 1969

(Men aged 21 and over)



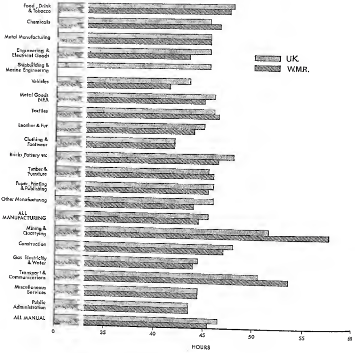
See paragraph 3.26

Source: D.E. Gazette

Fig 14

HOURS WORKED PER WEEK BY MANUAL WORKERS UNITED KINGDOM AND WEST MIDLANDS OCT. 1969

(Men aged 21 and over)



See paragraph 3.26

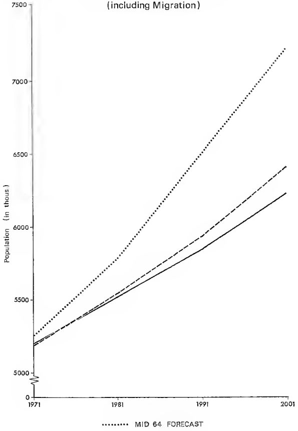
Source: D.E. Gazette

West Midlands

Fig 15

PROJECTED HOME POPULATION

(including Migration)



See paragraph 3.28

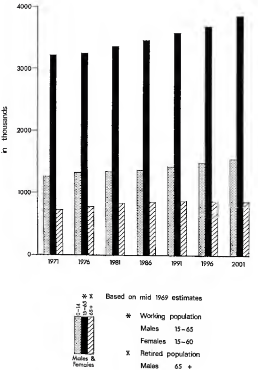
Source WMEP8

West Midlands

Fig 16

PROJECTED HOME POPULATION BY AGE GROUPS

(including Migration)



Based on mid 1969 estimates

* Working population
Males 15–65
Females 15–60

x Retired population
Males 65 +
Females 60 +

See paragraph 3.28
Source : W M E P C

CHAPTER 4 INDUSTRIES—1

4.1 In this chapter and the next we give the basic information which we have gathered on the main industries in the West Midlands. In this chapter we cover

A. Construction (S.I.C. Order XVII)
B. Bricks, pottery and glass (S.I.C. Order XIII)
C. Agriculture (S.I.C. Order I)
D. Food, drink and tobacco (S.I.C. Order III)
E. Textiles (S.I.C. Order X)

A. CONSTRUCTION

TABLE 2 Employment in the West Midlands

S.I.C.	Employees in Employment '000				1969 % of Total W.M. Employment	1969 L.Q.
	1961	1966(a)	1966(b)	1969		
XVII Construction	122·4	150·9	147·5	128·6	5·7	0·9

Source: D.E.

4.2 Construction was the eighth largest industrial order in the West Midlands in 1969 with 128,600 employees (5·7% of the Region's total). This figure includes men directly employed on construction work, mostly maintenance, by local authorities. During the period 1961–66, construction employment in the Region rose at a greater rate than in Great Britain, but after 1966 there was a sharp fall (Table 2). This fall may have been exaggerated by the increase in labour-only sub-contracting following the introduction of S.E.T. The decline in regional employment in 1966–69 was at only a slightly faster rate then in Great Britain. Forecasting the future level of employment in the Region, and in particular the level in construction, is very difficult indeed. So much will depend on the economic position of the country and indeed of the world, as well as on technical changes, demarcation agreements which may be reached, and the extent to which clerical and administrative staffs can be reduced by greater use of computers and improved office equipment. Nevertheless, it is hoped that the level of work available will require some increase in employment and the 1975 level could well approach that of 1966.

4.3 Despite the fall in total construction employment from 1966–69, the total of administrative, professional, technical and clerical staff in the industry rose by about 900, though the statistical significance of this is obscured by the move towards labour-only sub-contracting. The number of female employees in the industry is 9,000, or some 7%, so the introduction of equal pay should make no significant difference.

4.4 Of the operatives employed by firms registered in the West Midlands (in April 1969 approximately 100,000), about 25% were employed on repair and maintenance, 29% on new housing and 46% on new work other than housing. In addition, almost all the men employed by local authorities (approximately 25,000) are employed on maintenance. This means that nearly half of this total work force is employed on maintenance.

4.5 In the construction industries, the average weekly hours worked by manual workers (men 21 and over) in the West Midlands in October 1970 were 46·7 compared with 47·5 for the United Kingdom. However average hourly earnings for male manual workers over 21 were 56·5p, the second highest in the country behind the South East. The average weekly earnings in 1970 were £26·49 a week against £26·85½ in the United Kingdom.

4.6 There is no apparent shortage of skilled craftsmen in the Region at present, though there are occasional local shortages in some trades. The intake of apprentices is causing serious concern and there could be problems in future in the availability of carpenters, joiners, bricklayers and plasterers. It is understandable that boys and their parents are reluctant to seek apprenticeship in an industry where the demand for skilled men and indeed for the less skilled is subject to the cyclical changes which have occurred since the end of the war. The fairly rigid apprenticeship requirements of these trades is, of course, a national as well as a regional problem.

4.7 The building industry also faces a management problem arising from a shortage of foremen. These have traditionally been intelligent men who have qualified in the field of experience. With the improved educational facilities now available this source is dying out and a tendency is developing for leadership to come from the technician grades. However, in civil engineering boys are being trained in leadership as well as in technical skills, as part of a new training system.

House building

4.8 The number of houses completed in the West Midlands during the nine years 1961–69 was 337,456 (Table 3). Since 1964 this has been an average rate of just over 40,000 a year. Housing demand in the Region over the next 10–15 years will be affected not only by the natural growth in the population, but also by the need to undertake a substantial renovation or replacement of old houses. It will also be effected by wage and interest rates, economic rent levels and subsidy arrangements and by employment prospects. It has been calculated that more than 500,000 houses in the Region are over 60 years old. There will have to be a steady replacement of the worst of these and when this is taken into account it is probable that the rate of completions will need to be maintained at about 40,000 new houses a year for at least 10–15 years.

TABLE 3 Houses completed—West Midlands

	Private Sector	Public Sector	Total
1961	17,823	10,908	28,731
1962	18,202	13,873	32,075
1963	19,592	12,602	32,194
1964	23,499	14,817	38,316
1965	23,957	17,586	41,543
1966	21,382	15,837	37,219
1967	21,276	24,161	45,437
1968	24,055	19,994	43,999
1969	16,674	21,268	37,942

Source: D.O.E.

4.9 There would appear to be an acute shortage of land available for speculative building. In some respects this shortage is artificial, but it is leading to a reappraisal of the use of urban land. The strength of the tradition for West Midlands workpeople to live close by their place of work, coupled with improvements in industrial establishments which make them cleaner and pleasanter to work in and live near, could and should lead to less rigorous segregation of industrial and residential zones.

Industrial construction

4.10 The progress of industrial construction in the West Midlands has been restricted by development regulations, with many industrialists unable to proceed with plans they would like to implement. The increase in the i.d.c. limit at the end of 1970 will help but there are arguments in favour of further relaxation, especially for firms who have already made a contribution to the development areas and now wish to rationalise or improve their existing West Midlands bases.

Commercial building

4.11 Commercial building was restricted by the O.D.P.* control until this was lifted in December, 1970. It is now only restricted by a shortage of money.

Civil engineering construction

4.12 The civil engineering industry carries out all the heavy construction work and supplies the physical infrastructure for other industries.† Apart from heavy industrial plants and heavy foundations for large engineering machinery, it is almost wholly employed in the public sector which accounts for over 95% of its turnover. Civil engineering is particularly affected by fluctuations in government spending on infrastructure. This kind of expenditure is frequently the first to be curtailed by any government wishing to introduce economies in its budget, making it very difficult for the industry to make any long term estimate of demand and to plan its capital investment.

4.13 Civil engineering would be better served if national expenditure were regular, even if this necessitated a lower annual level than at present. For example, there appears to be a hiatus in the construction of large road works in the West Midlands on completion of the M1/M6 link. Urgent consideration should be given to bringing forward the next stage of the road building programme to hold together existing construction teams.

Publicly-financed buildings

4.14 The rate of construction of publicly financed buildings is governed by general government financial policy and is thus subject to change at relatively short notice.

4.15 The financial difficulties of the building and civil engineering industries have been greatly increased in the current period of severe inflation by the insistence of Government department and local authorities on firm price contracts. This policy has been stubbornly maintained although the nationalised steel industry is not prepared to quote firm prices even for the duration of the contract for essential materials to be embodied in the work. If the margin to cover price and wage increases is too high the contractor does not secure the contract. If it is too low and he gets the contract he may make a loss. There is also a secondary effect in that the cost of fuel and energy forms a big proportion of the total cost of the manufacture of materials such as bricks and cement and again nationalised industries are not prepared to quote a firm price for supply of coal and other fuels although they insist on a firm price from contractors working for them. It appears that there is some association between the increasing number of bankruptcies in construction firms and the rigid adherence to the firm price policy.

Research

4.16 Research is carried out by the Construction Industry Research and Information Association which has recently been reconstituted. Most of the subscription income of this organisation comes from civil engineering firms. The Government grants support on a pound-for-pound basis. The main research organisation for the construction industry is the Building Research Station. There are also various other Government bodies, a growing number of universities, the Cement and Concrete Association and the timber, brick and constructional steelwork industries. There has been a considerable expansion of research and interest in the last five years, but there is room for much more.

Technological developments

4.17 Most of the technological improvements apply to materials and their use rather than to methods of construction, though the industries are becoming more mechanised. The use of prefabricated components can be an advantage only where there are reasonably long production runs. Dimensional co-ordination may well assist this, but the nature of architecture is such that complete dimensional co-ordination is likely to be reached only slowly. In industrial construction there has been increased use of standardised light buildings, mainly of the portal frame type in steel or concrete.

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* Office Development Permit.

† For a definition of 'infrastructure' see footnote to paragraph 6.47.

Another new technique used for many types of building is 'rationalised traditional building'—simply the result of the application of intelligent thought and planning to traditional construction techniques.

Metrication

4.18 It is planned that all construction work will be carried out to metric dimensions by the end of 1973. This provides a welcomed opportunity for an exercise in dimensional co-ordination which could lead to some components being made in a smaller variety of alternative standard sizes. This would simplify construction, but possibly at the cost of a duller environment, any variation from the standard becoming even more expensive to accommodate.

Rationalisation

4.19 The trend to merge and amalgamate continues, with an increasing number of bankruptcies in the construction firms recorded each year, which led to a decrease between 1967 and 1969 of 542 in the number of firms in the Region (Table 4). However, this trend may not be in the public interest as the advantages to be gained from size in construction are less pronounced than in many other industries. Since each project is a seperate job, carried out in its own location and under its own conditions, there is less scope for economy of scale in construction than in manufacturing.

4.20 The tendency for modern projects to be larger is of benefit to the larger contractors but means that the smaller contractor is able to tender for a decreasing proportion of construction work other than house-building. The small to medium-sized firm is also more seriously affected by the fluctuations of the national economy and suffers from organisational difficulties compounded by tax and close company regulations. For it to flourish and for conditions which enable the smaller firm to grow the industry needs modulation of the demand fluctuations and a consistent rate of national growth.

B. BRICKS, POTTERY, GLASS, etc.

4.21 There are a great many very small firms in the housebuilding industry, principally engaged in repair work. This is not peculiar to the West Midlands but, with the substantial number of old houses in the Region, there should be a continuing role for these firms.

4.22 This industry group in 1969 employed some 80,000 people, representing 3·5% of the total regional employment. There was a decline of some 3,000 between 1961 and 1966 and a steeper fall of nearly 6,000 between 1966 and 1969. In the earlier period there was a slight increase in employment in this order in Great Britain, whilst in the later period there was a faster decline than in the West Midlands. In 1969 the Region accounted for 22·9% of Great Britain's employment in this Order.

4.23 S.I.C. XIII is divided into five M.L.H.'s, bricks; pottery; glass; cement; abrasives and other building materials. Of these, pottery is the only one providing more than 0·5% of the Region's total employment. Pottery also has an extremely high location quotient, the West Midlands having about four-fifths of the country's employment in the industry (Table 5). In the

TABLE 4 Size of construction firms

Number of employees	Number of Firms				Decrease 1967–9	
	W.M.R.		G.B.			
	1967	1969	1967	1969	W.M.R.	G.B.
1–7	5,419	5,214	57,606	54,895	205 (4%)	2,711 (5%)
8–59	1,899	1,588	20,900	19,387	311 (16%)	1,513 (7%)
60–299	231	210	2,522	2,404	21 (9%)	118 (5%)
300–599	22	21	299	270	1 (5%)	29 (10%)
Over 600	22	18	222	221	4 (18%)	1 (–)
Total	7,593	7,051	81,549	77,177	542 (7%)	4,372 (5%)

Source: Bulletin of Construction Statistics; Supplements for April 1967 and April 1969.

TABLE 5 Employment in the West Midlands

M.L.H.		Employees in Employment '000				1969 % of Total W.M. Employment	1969 L.Q.
No.	Title	1961	1966(a)	1966(b)	1969		
461	Bricks, fireclay, etc.	11·5	10·5	10.6	9·5	0·4	1·5
462	Pottery	55·1	53·6	53·6	48·4	2·1	8·0
463	Glass	7·6	7·9	8·1	8·5	0·4	8·0
464	Cement	1·5	1·6	1·6	1·9	0·1	1·0
469	Abrasives, etc.	12·4	11·2	11·9	11·8	0·5	0·9
S.I.C. XIII	Bricks, pottery, glass, etc.	88·0	84·8	85·8	80·0	3·5	2·3

Source: D.E.

North Staffs sub-region pottery employs nearly 20% of the total working population.

4.24 Within the Region, there is a quite marked sub-regional distribution of employment in these industries. The concentration of bricks is mainly in North Staffs. and the conurbation; pottery mostly in North Staffs.; glass in the conurbation; cement in the Coventry sub-region; and abrasives principally in the Central sub-region but also spread over the other areas.

4.25 The group has a higher than average proportion of female employees at 41% in 1969 against 37% for the Region as a whole. This is entirely due to the pottery industry, the work force of which in 1969 had 55% females. The other industries in the group, with the exception of glass (27% females) were predominantly male occupation. The female labour force in pottery has been declining and is expected to continue to fall whilst male employment should remain at about its present level. The decline to date is thought to be due to the relative scarcity of male employment in the Stoke-on-Trent area. There is an unfulfilled demand for female labour in domestic ware production, where women are much better suited for such work as decoration, selection and detailed handwork. However, the establishment of equal pay, together with considerable mechanisation of processes, is likely to lead to the ratio of male to female employees in the whole industry equalising, or even favouring males.

4.26 In the industry group, the average hours worked by men over 21 in October, 1970 were 45·4 in the West Midlands, as against 46·9 in the United Kingdom. Hourly rates in the region were marginally higher, at 61·5p, than for the whole country (61·0p), resulting in average weekly earnings of £27·98½ in the West Midlands and £28·72 in the United Kingdom.

Output

4.27 Net output per head for the Order in the West Midlands was £1,487 in 1968. This was more than double the figure for 1958 (£723) but remained at only 75% of the net output per head for these industries in Great Britain.

4.28 The pottery industry exports some 30–35% of its output overall. One section, domestic ware, exports nearly 45% of its annual production. The ceramic tiles and sanitary ware sections are dependent on the building industry for their economic health—both have ample capacity to serve the home market and maintain a developing export trade. The fourth section of the pottery industry, electrical porcelain, has been passing through a difficult period. Its products are made for the Central Electricity Generating Board and for electrical contracting companies. A miscalculation of the electricity demand in the National Plan of 1964 led to heavy over-committal to H.T. capacity in both the United Kingdom and Europe so that this section has had to fight for export markets to fill production capacity against very low prices.

4.29 The brick industry is neither exporter nor importer. Over the last twenty years it has been facing increasing competition from both greater use of industrialised and system building and substitution of other products (e.g. breeze, concrete and other blocks). However, the National Building Society's four-yearly analyses show that in 1962 some 75% of houses were predominantly constructed of brick; by 1966 this had fallen to 50% but by 1970 recovered to almost 58%. This suggests that brick manufacturers may be regaining some of the ground lost to blocks in the first half of the 1960's. Within the West Midlands, brick production has remained around 7% of the United Kingdom total.

Technological developments

4.30 The brick industry is alive to the problems facing it and research is being continuously carried out towards making brick-manufactured products more acceptable and competitive. It is meeting the challenge by such means as the introduction of packaged bricks and mechanical handling, and by the development of the perforated brick and of brick-faced pre-fabricated panels. Improved kiln design and firing methods and the introduction of electronically controlled manufacturing processes have also contributed. The Brick Development Association is now supported by about 80% of the industry and so is well-placed to maintain the industries competitiveness in the face of changing methods and materials.

4.31 Revolutionary technological changes are not envisaged in the pottery industry in the near future and the increased competition from glass ceramics and plastics is not expected to affect the industry adversely in the next decade. There is some scope for improvement in handling techniques and controls but these are not likely to bring any great cost reductions. A particular problem for the tableware sector is that capital costs of equipment are close to labour costs so no dramatic substitution of labour by mechanisation can be anticipated.

4.32 The pottery industry has its own very good research association and has close links with the North Staffordshire College of Technology and Leeds University. Some marginal technological improvements could be made, and production costs lowered in the sanitary ware section if the requirements of the various local authorities were standardised over the whole country.

Rationalisation

4.33 There has been a decline in the number of brick undertakings in recent years due to concentration, acquisition and amalgamation and closures. The brick industry now consists of a small number of large firms who are together responsible for the greater part of total production. Nationally, over half the total brick capacity is in the hands of five firms and 75% is accounted for by fewer than 50 firms.

4.34 In the pottery industry, substantial rationalisation has already taken place and is expected to continue. Over the past five years such things as process development, marketing techniques, building regulations and the need for modernisation have all exerted pressure on small firms. Although some still hold a place in the market, the tendency has been for them to join the bigger groups and it is expected that eventually only a few small firms in specialist fields will remain.

Raw materials

4.35 Both the brick and pottery industries get virtually the whole of their raw materials from within the country. Bricks can be produced from clay found in any part of the country. However, the special clay used to make Fletton bricks, which has a large enough fuel content to be of considerable economic advantage in firing, is readily available only in the areas around Peterborough, Bedford, Bletchley and Calvert. The clay for pottery is located in the South-West so that good communications are vital to the industry. There appear to be adequate reserves of clays but there is increasing cost pressure on china clay because of competing demand from the paper industry. Fuel costs are also important to both bricks and pottery, though there are no supply problems.

Glass, cement and abrasives

4.36 The other industries in this group are small employers in the Region, although glass is of some importance in value terms. No detailed examination was made of these industries but, on the information available, no difficulties are foreseen which might seriously affect the regional economy.

C. AGRICULTURE

4.37 In 1969 the area of farm land in the West Midlands Region was 2,445,500 acres, a drop of some 99,300 acres since 1960. This has coincided with the general trend in England and Wales. The Region contains some 9% of the farmland of England and Wales.

4.38 Shropshire has the largest area of farmland, with some 29% of the regional total, followed by Staffordshire (21%), Herefordshire (18%), Warwickshire (18%) and Worcestershire (14%).

4.39 In the period 1960–69, the Region lost 3·4% of its farmland. There is a tendency to look at each successive encroachment upon farmland in isolation. In the long term, however, the cumulative effect of such encroachment is significant, representing in this Region between 1960 and 1969 some 99,300 acres.

Crops

4.40 As will be seen from Table 7, every county showed large increases between 1960 and 1968 in the acreage under cereals (excluding wheat) whilst sizeable

TABLE 6 Employment in the West Midlands and basic facts

M.L.H.		Employees in Employment '000				1969 % of Total W.M. Employment	1969 L.Q.
No.	Title	1961	1966(a)	1966(b)	1969		
001	Agriculture & Horticulture	43·3	31·9	31·8	27·7	1·2	0·8
S.I.C.I.	Agriculture, Forestry & Fishing	44·1	32·5	32·4	28·2	1·2	0·7

	Year		Year	
Acreage	1960	2,544,800	1969	2,445,500
No. of holdings	1961	36,190	1969	25,850
Av. weekly earnings	1967	£14·78½	1969	£17·24½
Av. weekly hours	1967	49·8	1969	49·5
Av. hourly earnings	1967	29½p	1969	35p
Cereal acreage	1961	458,700	1968	699,500
Cattle pop.	1961	1,006,000	1968	1,017,000
Sheep	1961	1,973,000	1968	1,912,000
Pigs	1961	446,000	1968	483,000

Source: D.E. & M.A.F.F.

TABLE 7 Cropping in the West Midlands Counties and England and Wales

	Salop	Staffs.	Hereford	Warwicks.	Worcs.	West Midlands	England & Wales
% Distribution 1968							
Wheat	24·3	14·4	18·3	27·8	15·2	100	
Other Cereals	31·7	18·1	14·8	23·1	12·3	100	
Potatoes	29·6	26·5	15·7	17·5	10·7	100	
Sugar Beet	59·9	12·0	7·3	2·6	18·2	100	
Horticultural crops	4·1	6·7	29·2	9·4	60·6	100	
Hops	0·2	–	67·4	–	32·4	100	
Other crops*	30·0	11·2	27·0	18·8	13·0	100	
% change in acreage 1960–68							
Wheat	+27·7	–0·1	+48·5	+8·7	+21·4	+21·4	+16·0
Other Cereals	+64·4	+62·6	+69·1	+58·6	+68·7	+63·9	+31·1
Potatoes	+5·4	–16·5	+21·7	–8·8	–21·9	–5·3	–11·5
Sugar Beet	+2·6	–21·7	–16·2	–29·6	+10·4	–2·5	+8·6
Horticultural crops	–37·4	+0·5	–27·6	–13·1	–22·3	–22·7	–5·7
Hops	–28·6	–	–7·2	–	–4·3	–6·3	–10·8
Other crops*	–42·6	–55·6	–40·2	–21·9	–30·3	–39·5	–31·0

* Mainly animal feed crops such as kale and fodder roots

Source: M.A.F.F.

increases occurred in the wheat acreage in Herefordshire, Shropshire and Worcestershire. Herefordshire and Shropshire were the only counties with an increase in acreage under potatoes. Staffordshire was the only county which did not show a decline in its horticultural acreage. The sugar beet acreage declined in counties other than Worcestershire and Shropshire, the two counties of the West Midlands in which there are sugar beet factories.

Livestock

4.41 As will be seen from Table 8, only Herefordshire showed an above national average increase in livestock units from 1960 to 1968. The ranking of the counties in 1968 was, however, the same as in 1960, with Shropshire at the head, with about 32% of the regional total in 1968.

TABLE 8 Livestock Units*–West Midlands Counties and England and Wales

County	Livestock Units 1968 (thousands)	% Distribution 1968	Change 1960–68	
			Thousands	%
Salop	387·2	31·5	5·2	1·4
Staffs.	265·8	21·6	7·5	2·9
Hereford	242·6	19·7	13·0	5·7
Warwicks.	181·4	14·8	−5·9	−3·2
Worcs.	152·6	12·4	6·0	4·1
West Midlands	1,229·6	100·0	25·8	2·1
England and Wales	11,757·8	–	625·8	5·6

* A livestock unit is a statistical standard in terms of dairy cow equivalents (e.g. 5 ewes = 1 dairy cow = 1 livestock unit).

Source: M.A.F.F.

Manpower

4.42 The West Midlands Region is a competitive one for labour and agriculture cannot match the pay and conditions of manufacturing industry in the urban areas. The gap in earnings between agriculture and other industries is almost certainly greater in this Region than in the rest of England and Wales.

4.43 A special feature of the agricultural labour force, both nationally and in the Region, is the high employer/self-employed element relative to other sectors of the economy. In a period of declining agricultural employment, this group has constituted a sector of relative stability. Although there are no records of numbers of farmers, it is estimated that farmers accounted for somewhat less than one-third of the numbers engaged full-time on farms in the West Midlands in 1960, but that by 1968 they may well have made up about two-fifths of the total labour force.

4.44 In 1961 in the West Midlands Region, the number of employees in employment was 43,300. This declined to 27,700 in 1969. This drop was in line with that for England and Wales. These figures exclude of course both the farmer and his wife. There was a greater percentage drop in the number of boys than in men, indicating that fewer boys are coming into the industry to work full-time.

4.45 The counties of Worcestershire and Herefordshire, growing considerable acreages of labour intensive crops, such as fruit, vegetables and hops, employ the highest number of workers to the acre.

4.46 The average weekly hours in agriculture by whole-time men employed regionally in the industry in 1969 were above the national average (49·5 hours to 48·7 hours). The average hourly earnings in the industry were equal to the national average, so it cannot be argued that the high wages paid in manufacturing industry in the Region have had any impact on agricultural wages. The average hourly earnings rate in agriculture in the West Midlands tended to be only two-thirds of that for manufacturing, the disparity being most marked in this Region as compared with others.

4.47 Whilst we have dealt with the decline in the labour force, there is a probable trend which can be established that quantitatively there is still scope for further reductions. Qualitatively, there is need for agriculture to retain an increasing proportion of skilled workers. Whether agriculture will be able to do this will depend on the competing attractions of other industries and the facilities available for training in agriculture. Failure could pose serious problems. A linear projection would reach zero in a little over 10 years. Clearly this is an unrealistic forecast, and one can expect a levelling out, probably within the next 5 years or so. Capital substitution for labour is likely to continue, but probably at a lower rate than in the immediate past. There seems to be no doubt that the increased proportion of skilled workers will require a higher standard of living accommodation.

Training and Research

4.48 Most of the training of agricultural workers is done on the farm. For those seeking to make a career in farm management, there are, however, very adequate training facilities in the Region in several purely agricultural training colleges.

4.49 It has been suggested that universities should take a greater interest in agriculture, much as Reading University does in the South East. The West Midlands Region is probably the most versatile of all the regions from an agricultural point of view, and it has four universities, at least two of which could be of considerable help to agriculture in the Region. Some doubt has been expressed as to whether the facilities in the Region for veterinary research are adequate, and it has been suggested, and we feel with some justification, that there should be established in the Region a veterinary research centre to which problems could be taken. We are led to believe that veterinary problems are costing considerable sums of money to farmers, particularly with the increased intensification of livestock breeding. Whilst it is agreed that the Veterinary Investigation Centres of the Ministry of Agriculture, Fisheries and Food provide excellent consultative services for farmers, no university in the Region is doing agricultural, including veterinary, research, and it is felt that encouragement should be given to one of the universities to extend its work in this direction.

Farm size

4.50 In each county since 1960 there has been a marked reduction in the number of holdings of less than 100 acres. There has been a smaller reduction in the number in the 100/300 acre range, and an increase in the number of holdings of 300 acres and over. In the Region as a whole there was an increase of 315 in the number of holdings of 300 acres or more, 25% of this increase taking place in Salop, and another 20% in Herefordshire. In 1968 there were more large holdings in Salop than in any other county, with Warwickshire ranking second. Table 9 shows the ranking for the West Midlands.

TABLE 9 Agricultural holdings of 300 acres and over in the West Midlands and England and Wales

County	Number of holdings 1968	% Distribution 1968	Change 1960–68	
			Number	%
Salop	495	30·6	79	19·0
Warwicks.	346	21·4	55	18·9
Hereford	300	18·6	63	26·6
Staffs.	255	15·8	58	29·4
Worcs.	220	13·6	60	37·5
West Midlands	1,616	100·0	315	24·2
England & Wales	16,368	–	2,519	18·2

Source: M.A.F.F.

4.51 By 1968 almost one-third of all the farmland of the Region was in holdings of 300 acres or more. The effect of the trend towards large farm units on employment cannot be estimated numerically owing to a dearth of statistics. Moreover, there are no breakdowns, as far as we know, available on farm size by numbers employed. It is clear, however, that the formation of larger farm units has gone on side by side with the reduction in the total farm labour force

4.52 The growth in the number of larger farm units certainly reflects the trend towards a more capital intensive agricultural sector. For instance, there were some 101,500 tractors on farms in England and Wales in 1942, but by 1966 there were 428,000. In 1942 there were 24,000 milking machines, and by 1962 there were 106,00. These trends to greater capitalisation are also reflected in the changing patterns of expenditure In 1938/39, about 9·5% of farmers' expenditure went on machinery and 26·8% on labour, whereas in 1966/67 the comparable proportions were, machinery 16% and labour 19·9%.

4.53 A major consequence of the larger farm unit and its higher capital intensity is the growing demand being generated for public services. The 'industrialised farm unit' in many ways emulates the infrastructural requirements of its cousins in manufacturing industry, demand ing an increasing amount of services, such as water supply and sewage disposal. Moreover, as it may reasonably be expected that the number of large units will continue to increase, it would follow that their demand on certain types of public infrastructure will also rise. Another factor which should be borne in mind when thinking in terms of large farm units and more machinery, is that it will be essential to maintain the existing network of minor roads.

4.54 From the point of view of agricultural pollution, there are no problems of serious proportions regionally, but the problem should be kept under review. Effluent from intensive livestock enterprises could become a localised problem, especially near urban areas, but at present this is not of regional significance.

Output and productivity

4.55 The total growth output of farming in the United Kingdom rose from £295 m. in 1938/39 to £1,852 m. in 1966/67, and this increase in output has been accompanied by a considerable increase in labour productivity. From 1954 to 1960 agricultural output rose by 2·4% per annum, and productivity by 3·9% per annum. In the 1960/64 period, however, there was an upswing in output to 3% per annum, with productivity rising to 6% per annum. Agricultural productivity in this later period increased therefore at twice the rate of the economy as a whole, namely 2·7% per annum.

European Economic Community

4.56 Entry into the European Economic Community will have consequences on agriculture. It is extremely difficult to forecast what these will be. No authoritative commentary has attempted to show how the future pattern of British agriculture will develop. Entry is likely immediately to favour the cereal growers and be to the disadvantage of stock farms but these may well prove to be transient effects and the long-term consequences either nationally or regionally, cannot be predicted with certainty. Again, it is possible that the affect of such entry will be on the consumer rather than on agriculture.

D. FOOD, DRINK AND TOBACCO

4.57 In the West Midlands there is no tobacco processing, which partly accounts for the Order having a location of 0·8. During the period 1961–66 employment in this Order increased at a slightly greater rate in the West Midlands (1·3%) than in Great Britain (1·0%) but between 1966 and 1969 regional employment fell by 5·2% compared with a decrease of 1·7% in Great Britain. An important feature of the Order is that about 40% of those employed are women, this proportion being above the average for manufacturing industry.

4.58 Particularly important for the West Midlands are three Minimum List Headings which together account for 70% of the Region's employment in this Order, M.L.H. 212 bread and flour confectionery; M.L.H. 231 brewing, malting and other drink and

TABLE 10 Employment in the West Midlands

M.L.H.		Employees in Employment '000				1969 % of Total W.M. Employment	1969 L.Q.
No.	Title	1961	1966(a)	1966(b)	1969		
211	Grain milling	0·9	0·6	0·9	0·6	–	0·2
212	Bread and flour confectionery	18·4	10·4	20·7	18·7	0·8	1·2
213	Biscuits	1·5	1·7	1·7	1·6	0·1	0·3
214	Bacon curing, etc.	8·5	6·9	6·9	7·5	0·3	0·8
215	Milk products	2·8	2·9	3·0	2·6	0·1	0·7
216	Sugar	0·6	0·5	0·5	0·5	–	0·3
217	Cocoa, chocolate etc.	15·2	14·5	14·6	14·9	0·7	1·7
218	Fruit and Veg. products	4·3	3·8	3·8	4·2	0·2	0·6
219	Animal & poultry foods	0·4	0·6	0·7	0·9	–	0·4
229	Food industries n.e.s.	2·8	2·1	2·4	2·2	0·1	0·4
231	Brewing and malting	13·8	14·4	14·4	11·6	0·5	1·3
239	Other drink industries	4·4	4·0	4·0	4·4	0·2	0·7
240	Tobacco	–	–	–	–	–	–
S.I.C. III	Food, drink and Tobacco	71·5	72·4	73·6	69·8	3·1	0·8

Source: D.E

M.L.H. 217 cocoa, chocolate and sugar confectionery. The first two of these followed the pattern of the whole Order, doing better than Great Britain in employment terms from 1961 to 1966 and worse from 1966 to 1969. The third, cocoa, chocolate and sugar confectionery, showed an increase of employment of 2% in 1966–69, whilst Great Britain employment was decreasing 6·3%

4.59 The structure of the industry has changed considerably in the 60's with the disappearance of many of the medium-sized and smaller firms as a result of mergers. The movement towards larger units came with better communications, new forms of distribution, modern marketing methods and technological advances that improved shelf life and quality. Even so, the need to be as near both the source of supply and the final market as possible are still limitations on the rationalisation of production, particularly where distribution costs are significant. It is expected that the industry will continue towards concentration into large multiproduct companies, covering several sectors of the industry, a process which has involved West Midlands firms becoming subsidiaries of larger organisations with headquarters outside the Region. Mostly the companies which participate in merges are themselves of at least moderate size so that a pattern is now emerging with a few large companies and many small companies, but few in between.

4.60 There are areas of considerable concentration. In biscuits, for example, 63% of the business was done by two firms in 1967, and in cocoa and chocolate confectionery three firms account for 78% of the trade. The same process is at work in food distribution, where 50% of food retailing is now in the hands of supermarkets and multiples. It is estimated that by 1978, three chains will control 7,500 outlets, and that supermarkets will be doing 60% of all food turnover. The rise of the supermarkets handling a relatively small range of leading lines increases the sales of the large companies selling nationally advertised and branded products, but it also enables small and medium-sized firms to survive as suppliers of 'own label' merchandise

4.61 The annual cost of food imports has increased by 14% since 1960, of which slightly less than half represents an increase in quantity. Imports of manufactured foods are expected to continue to increase in value by between 1% and 1½% per annum.

4.62 Exports in the same period have grown significantly and there is every indication that these exports will continue to increase by some 3–4% per annum.

4.83 The effects of technological change are far-reaching in the food industry and research expenditure in the food processing industry is estimated to have increased from just over £5 million per annum in 1961/62 to £12 million per annum in 1966/67. The two main areas of change are first in the application of automatic control techniques and secondly in the introduction of new processing techniques.

4.64 As a result, continuous production plants are being installed throughout the industry. These layouts reduce labour and frequently economies on capital as well (less work in progress, fewer storage vessels, etc.). The introduction of more shiftworking is a natural consequence of these developments and this can have the effect of transferring work traditionally done by women to men. Some outstanding examples are the continuous fermentation of beer (twenty times faster than conventional batch production), which is used by Bess and Ind Coope at Burton and M. & B. in Birmingham, and the Chorlaywood bread process which eliminates the need for bulk dough fermentation.

4.65 The new processing techniques include freeze drying, dielectric and microwave heating and irradiation. Under the same heading come improvements in packaging. The effect of these developments and of the growth of convenience foods is to transfer the work of preparation and packing for individual sale from the retailer to the manufacturer, so accelerating the trend towards self service.

4.66 The general effect of these changes on companies is to allow the big manufacturers to increase their economies of scale in production and to break into fields that, because of problems of freshness and transport costs, were reserved for the small local organisation. The impact on employment will be a significant reduction in process workers, a shift in the balance between men and women as continuous layouts are introduced and an increased need for skilled research workers, food technologists, technicians and high level maintenance staff.

E. TEXTILES

TABLE 11 Employment in the West Midlands

M.L.H.		Employees in Employment '000				1969 % of Total W.M. Employment	1969 L.Q.
No	Title	1961	1966(a)	1966(b)	1969		
411	Production of man-made fibres	7·2	6·4	6·4	7·3	0·3	1·6
412	Spinning of cotton etc.	2·4	2·3	2·3	2·7	0·1	0·3
413	Weaving of cotton etc.	2·6	2·3	2·6	2·3	0·1	0·3
414	Woollen and worsted	2·3	1·8	1·4	1·0	–	0·1
415	Jute	–	–	–	–	–	–
416	Rope, twine and net	0·4	0·2	0·2	0·3	–	4
417	Hosiery	4·1	3·8	3·5	3·7	0·2	0·3
418	Lace	–	–	–	–	–	–
419	Carpets	11·0	11·9	11·9	12·8	0·6	2·8
421	Narrow fabrics	4·2	3·5	3·5	3·6	0·2	1·7
422	Made-up textiles	1·8	1·9	2·0	1·8	0·1	0·6
423	Textile finishing	1·6	1·8	1·8	1·6	0·1	0·2
429	Other textile industries	0·6	1·0	0·9	0·8	–	0·3
SJC X	Textiles	38·4	36·9	36·6	38·0	1·7	0·5

Source: D.E.

4.67 In employment terms the textile industry is not important in the Region. However there is a higher than average concentration in three of the Minimum List Headings, M.L.H. 411 production of man-made fibres, M.L.H. 419 carpets and M.L.H. 421 narrow fabrics. In the two periods 1961–66 and 1966–69, employment in production of man-made fibres in the Region moved against the national trend, the West Midlands losing employment in the former period but gaining in the latter. Carpets in the Region gained in employment in both periods but at a lower rate than in Great Britain. Narrow fabrics lost employment at a greater than average rate between 1961 and 1966 but showed a slight gain between 1966 and 1969 whilst nationally employment continued to fall.

4.68 Whilst the textile industry in the West Midlands does not employ a large number of people against the total labour force of the Region, the three pockets of textile manufacture, namely carpets in the Kidderminster district, man-made fibres in the Coventry sub-region, and various textile processes in Leek, are for their localities of considerable importance.

4.69 In Leek 33% of the total of employees in all industries and services are employed in textile processes.

4.70 In Kidderminster 34% of the total labour force is employed in the carpet industry. This industry is very sensitive to economic "squeezes" or the reverse. A decrease in house building, high mortgage rates, or any downturn in the economy has an immediate effect on the carpet industry.

4.71 The labour force in the carpet industry is not likely to grow, due to mechanisation. There will be a demand for a more skilled operative, and this in turn may well bring about a decrease in the labour force.

4.72 Export prospects for the carpet industry would appear to be good, both in the short and the long term. Trade with the E.F.T.A. countries continues to grow very steadily, as does that with the E.E.C. countries, where the change in fashion from wooden floors to carpeting from wall to wall should benefit industry in Great Britain.

4.73 In Coventry and, to a lesser extent, the conurbation, the numbers employed in the production of man-made fibres in 1969 compared with 1961 showed only a slight increase in absolute numbers. In 1961 the West Midlands location quotient was 1·7 against the 1·6 of 1969.

4.74 Some of the factors determining location in the production of man-made fibres, for example, a good supply of soft water and the disposal of effluent, point to the probability of there being little productive expension in the West Midlands in the future, although there is no evidence of the present level of production falling.

CHAPTER 5 INDUSTRIES—2

5.1 In this chapter we deal with two of the most important sectors in West Midlands industry, namely the metal producing and using industries (S.I.C. Orders V, VI and IX) and vehicles and tyres (Parts of S.I.C. Orders VIII and XVI), under the following headings:

A. Metal-working industries
B. Metal manufacture (S.I.C. V)
C. Engineering and electrical goods (S.I.C. VI)
D. Metal goods, not elsewhere specified (S.I.C. IX)
E. Vehicles (S.I.C. VIII) and Tyres (S.I.C. XVI)

A. METAL WORKINGS INDUSTRIES

5.2 The metal working industries may be divided into three stages, primary production from ores and scrap, secondary processing or the conversion of crude or semi-finished products into finished products for industrial use, and the manufacture of metal goods, some of which are in final saleable form but most of which are subsequently incorporated in engineering assemblies. The first two stages are covered by S.I.C. Order V, metal manufacturing, and the third stage by Order IX, metal goods n.e.s. Additionally, secondary processing and the manufacture of metal goods merge imperceptibly into general engineering where, in fact, many of the larger firms operate their own foundries or forges. These fall within Order VI, engineering and electrical goods, Order VII, shipbuilding and marine engineering, which is not present to any significant extent in the West Midlands Region, and Order VIII, vehicles. Such demarcation lines as there are arise from the historical pattern of organisation in the metal working industries. A series of specialised metallurgies have arisen which have led companies to concentrate only on iron and steel or on copper or aluminium or one of the other non-ferrous metals. These have been combined with process diversification under which individual companies have only been concerned with a limited range of the total series of processes from which an ore is converted into a finished metal product. There is an underlying economic logic in this pattern, but generally speaking there tends to be much greater vertical integration abroad.

Employment

5.3 The West Midlands was particularly attractive to this group of industries because of the pool of traditional skills present, though there is now a severe shortage of these skills. In 1970 registered vacancies considerably exceeded numbers of wholly unemployed for press tool makers, erector millwright and maintenance fitters, turners and machine tool setters. There is a considerable need for retraining in the Region but it is imperative that this should be based on effective manpower forecasting. Progress has already been made in reducing the length of apprenticeships, but the raising of the school-leaving age, together with the greater adaptability being shown by school-leavers and changes in the requirements of the jobs themselves, mean that the length of apprenticeships should be kept under review. The proportion of office workers has been rising in all these industries, except electrical engineering and other manufacturing. Increasing use of computers is beginning to have an effect on office staff but at present the principal justification for their introduction lies in saving through better planning rather than in staff cuts. The implementation of equal pay for women is expected to be costly for West Midlands industry but it should provide a spur to mechanisation and will result in some reduction in the numbers of employees, particularly of women.

Effects of Government policy

5.4 It has been said that the i.d.c. control has inhibited the growth of Regional industry and has brought about a wasteful dispersion of activity, although its effects on adaptation of industry are difficult to quantify. A more important consideration is the distinct possibility that new science-based industries, which should provide growth points for the future, are prevented from being set up in the Region.

5.5 'Stop-go' policies have had a very serious impact on West Midlands industry. Underheating is as bad for the Region as overheating because of its effect on industrial efficiency and planning. The effect of a quite small cut back in demand for a finished product can have an entirely disproportionate effect on manufacturers at the preceding stages. Because of the pipeline effect and inevitable changes in stocking policies at intermediate stages, the primary producer has to cope with much wider demand fluctuations than is generally realised. This is a major management problem in any capital intensive industry on which the impact of changes in economic policies is particularly severe (e.g. motor cars) and can inhibit capital expenditure and hence modernisation. Although in the short term there is some excess capacity available to meet expansion, in the longer term there is a need for more effective training arrangements to deal with skilled labour shortages, better manpower planning, better industrial relations which would help to control costs and better forecasting in capital investment to even out the demand cycle. Particularly important is the need for better forecasting of capital expenditure by the nationalised industries and by big firms, as overheating inevitably results when their investment programmes reach a simultaneous peak.

5.6 The metal working industries have a high dependence on overseas markets with all its consequences on the West Midlands. It has not been possible to quantify this, not least because of the complication of indirect exports of components made in the Region and assembled elsewhere. In general, the Region's metal working industries are very alive to, and geared to, exports. While a fairly high proportion of exports from the Region come from a relatively small number of major companies, many medium and small firms are also heavily involved in exporting. There remains some scope for the Region to expand its contribution to exports or, equally important, to import saving.

5.7 Joining the Common Market could have a dramatic impact on future investment and it is possible that industry has been holding up new manufacturing plant now in case the correct location should prove to be in Europe. It is necessary to reach a firm decision on entry as soon as possible and not to have another period of uncertainty.

Technological change

5.8 Technological developments are already affecting West Midlands industry. The big firms seem well able to meet this, although they would be helped by improved technological forecasting and the industry as a whole would benefit from more general knowledge of the likely consequences of technological change. There might, however, be difficulties for the small firms; for example, small metal machining component firms could be affected by the move from metal cutting to metal forming. The more rapid introduction of new technological developments is largely a question of the quality of management and availability of financial resources. As a result of a general lack of confidence in the national economy there are indications of a reluctance to try new developments or take any risk however calculated. There is much room for improvement in facilities planning and utilisation of equipment in the assembly industries. With the increasing capital intensity there will be a growing move towards more shift-working, in spite of the social problems and changes in customs and habits which this would entail.

5.9 There is need for the closest possible liaison between industry and university, although the West Midlands is ahead of most other regions in this respect.

B. METAL MANUFACTURE

5.10 This industrial Order includes smelting, refining and alloying (including steel melting); rolling and drawing; and the production of castings, forgings and other basic forms of ferrous and non-ferrous metals.

Employment

5.11 In employment terms (Table 12), metal manufacture was the seventh highest industrial Order in the West Midlands in 1969, employing 144,300 people or 6·4% of the regional total. During the period 1961–66 employment in this Order in the Region increased by 1·9% while in Great Britain it fell by 2·2%. Between 1966 and 1967, there was a sharp fall in metal manufacturing employment in the Region, but by 1969 the figures were beginning to increase again. Comparing 1969 with 1966, the Region showed a drop of 5·3% as against a fall in Great Britain of 6·5%.

5.12 Within the Order, M.L.H. 311 iron and steel (general) and M.L.H. 313 iron castings, etc. followed the pattern of the whole with an increase in 1961–66 and decrease in 1966–69. M.L.H. 213 steel tubes and M.L.H. 322 copper, brass and other base metals, decreased in both periods, while M.L.H. 321 light metals, after showing an above average rise of 16·3% in 1961–66, continued to rise slightly in the period 1966–69.

5.13 Within the Region, employment in metal manufacture is largely concentrated in the conurbation, in which the proportion has remained fairly constant since 1961 (see Table 13).

5.14 Average hourly earnings for men manual workers, 21 and over, in metal manufacture in the West Midlands in October, 1970 were slightly lower at 66p than in the whole of the country. Average hours worked were slightly lower than for the United Kingdom, giving average weekly earnings in the Region of £29·21 as against £29·98.

TABLE 12 Metal manufacture, Employment in the West Midlands

M.L.H.		Employees in Employment '000				1969 % of total W.M. employment	Location quotient 1969
No.	Title	1961	1966(a)	1966(b)	1969		
311	Iron and steel (General)	27·3	29·6	30·1	27·3	1·2	1·0
312	Steel tubes	28·0	26·1	26·3	24·3	1·1	4·6
313	Iron castings etc.	36·9	38·1	37·9	34·6	1·5	3·2
321	Light metals	18·4	21·4	21·3	21·8	1·0	3·7
322	Copper, brass, etc.	35·2	33·5	36·7	36·2	1·6	4·2
SIC V	Metal manufacture	145·9	148·7	152·3	144·3	6·4	2·5

Source: D.E.

TABLE 13 Metal manufacture, Employment in sub-regions of the West Midlands, 1969

M.L.H.	Conurbation	Coventry sub-region	Central sub-region	North Staffs	Western Counties	%
311	79·6	0·1	8·7	11·6	0·0	100·0
312	98·8	0·1	1·0	0·1	0·0	100·0
313	76·2	6·9	12·7	4·1	0·1	100·0
321	63·0	13·6	23·2	0·0	0·2	100·0
322	79·8	1·0	4·8	7·2	7·2	100·0
TOTAL	79·5	4·0	9·6	5·0	1·9	100·0

Source: D.E. & W.M.E.P.B.

Output

5.15 Crude output figures are not necessarily the best measure of the growth of the metal industries since major development is directed towards quality improvement so that, for instance, the weight of engineering structures can be reduced without loss of strength or other properties. A reduction in volume resulting from such developments may be more than made up by the enhanced value of the output. However, the West Midlands net output for the Order in 1968 at £263·5m. was 23·4% of the Great Britain total. This compares with the 1958 figures of £148·3m. and 21·5%.

Location

5.16 In primary metal production the location of the industry is determined largely by access to raw materials, including fuel which is often a major factor in total cost. The West Midlands, which lies neither on major home ore fields nor close to the sea for reception of foreign ores, is not therefore significant as a source of primary metal production. At the secondary processing stage, as in the manufacture of metal goods, the advantages of location near to the source of raw material supply are less pronounced and are often out-weighed by the advantages of proximity to customers, the existence of a local pool of skilled labour or other factors. It is at these stages of metal manufacture that the West Midlands figures so prominently.

Rationalisation

5.17 At the primary production stage of metal manufacture the investment in fixed capital which is required is so heavy as to require the industry to be organised into large, financially powerful groups. At the secondary production stage, however, considerable numbers of small companies operate to meet the multifarious requirements of the engineering industry, which calls for flexibility and specialised skills on the part of its suppliers. Because of the predominence of the primary producers in this Order, two-thirds of the total number of employees work in establishments with 500 or more employees each.

5.18 There are indications of a trend towards amalgamation within the metal working industries reflecting a change in the nature of the engineering industries demand. Standardisation as the means of cutting manufacturing costs, together with the growth of total demands, has led to the greater adoption of mass production methods. Thus, materials and components must be available not only in standard sizes but in quantities sufficient to meet the planned levels of output of the finished products. Only large companies can command resources needed to provide this kind of service, so there has been an accelerating trend towards the formation of larger, more highly capitalised, units.

Technological developments

5.19 There will undoubtedly be a growing challenge from plastics and other materials in the future, although metal manufacturers have shown themselves capable of meeting new and more exacting requirements. Improvements have taken place both in relation to the specification of materials, such as the new alloys which have been developed for the aerospace industries, and to the new metal forming processes such as die-casting and sintering. Within the metal industry itself, competition is keen between the different metals since, for many applications, no one metal has an obvious technical ascendency over the others. In this competition some metals, e.g. copper and tin, have suffered from the extreme instability of their prices.

Research

5.20 There is substantial research in the industry directed towards both improving quality and reducing cost. The heavy investment now required in metallurgical research and process development is yet another factor favouring the formation of larger units in the industry. Company research and development are supported by the activities of a number of highly effective cooperative development organisations within the metal industry, such as the British Iron and Steel Research Association, British Cast Iron Research Association, the British Non-Ferrous Metals Research Association and the Lead-Zinc Development Association.

C. ENGINEERING AND ELECTRICAL GOODS

5.21 This Order is one of the major metal-using industry groups in the Region, providing employment for 13% of the regional work-force. It is divided into 20 Minimum List Headings, just over half of which are important either because of the concentration in the Region, or because of their contribution to the Region's employment. It is convenient to divide this Order into Mechanical Engineering (covering M.L.H. 331 to 351) and Electrical Goods (covering M.L.H. 352 to 369).

Mechanical Engineering

5.22 Employment in Mechanical Engineering rose between 1961 and 1966 but fell back again in the period to 1969. Within the total, however, three Minimum List Headings which are comparatively large employers in the Region, engineers' small tools (M.L.H. 333), other machinery (M.L.H. 339), and other mechanical engineering, n.e.s. (M.L.H. 349), continued to increase in employment terms in the later period. One substantial employer, industrial plant and steel work (M.L.H. 341), decreased in both periods. Although there are variations between Minimum List Headings, in 1969 in the group as a whole females accounted for only 20% of employment, as against an average of 35% over all industries.

5.23 The distribution of the mechanical engineering industries within the Region is shown in the following table.

5.24 In the future such developments as an increased use of numerically-controlled machine tools could have a considerable impact on the industry, leading to more three-shift working. The nature of the skill of the craftsmen would also vary and the demand would be for technicians, maintenance workers and trained machine operators. This would involve a considerable amount of re-training.

Marketing and distribution

5.25 Direct exports account for 36% of the output of the industry. To this can be added a considerable but unquantifiable amount for indirect exports. Of these exports, 35% are to Europe, 25% to the Commonwealth, 15% to North America and 6% to the Eastern Bloc. Although they considerably exceed imports, exports are still low in relation to output. Entry to the Common Market could be of help here. Within the United Kingdom the West Midlands is an ideal centre for the industry for the purposes of distribution to its customers.

The Region is also important because of the industrial linkages within the industry, with easy access to the small specialist firms, suppliers and sub-contractors.

Rationalisation

5.26 Some 58% of firms in the industry employ between 25 and 100 people. There are very small specialist firms manufacturing to order rather than stock. Although there are a number of large firms covering the whole range from metal production to finished product, progress towards rationalisation in the industry is slow. There is always likely to be a place for the small specialised firms as there will also be for new firms established by innovators having new tools or methods to exploit. As has been mentioned before, there is much less vertical integration in the United Kingdom industry than in many of our foreign competitors.

Technological developments

5.27 Although there are improvements, such as the trend towards fabrication as a replacement for casting, and an increase in the use of numerically-controlled machine tools, the rate of investment in the industry is still very low. In the United States, for example, the rate of investment per employee is nearly four times that of the United Kingdom. The reasons include

TABLE 14 Mechanical Engineering. Employment in the West Midlands

M.L.H. No.	M.L.H. Title	Employees in Employment '000 1961	1966(a)	1966(b)	1969	1969 % of total W.M. Employment	Location Quotient 1969
331	Agricultural machinery	3·3	4·5	4·5	4·4	0·2	1·3
332	Metal working machine tools	28·5	28·9	31·7	29·8	1·3	3·1
333	Engineers small tools	15·3	17·1	14·7	15·0	0·7	2·2
334	Industrial engines	11·0	11·1	11·1	9·9	0·4	2·4
335	Textile machinery	2·6	2·2	1·9	1·8	0·1	0·4
336	Contractors plant	1·4	2·1	2·7	2·9	0·1	0·7
337	Mechanical handling plant	4·8	6·0	7·5	6·3	0·3	1·0
338	Office machinery	2·0	2·7	2·6	2·6	0·1	0·5
339	Other machinery	27·0	30·3	29·8	30·7	1·4	0·8
341	Industrial plant and steelwork	27·9	25·7	28·5	27·9	1·2	1·6
342	Ordnance and small arms	4·3	2·4	2·4	1·6	0·1	0·8
349	Other mechanical engineering n.e.s.	33·3	40·8	41·0	42·0	1·8	1·6
351	Scientific, etc. instruments	6·5	5·3	6·3	4·2	0·2	0·3
All mechanical engineering		167·9	179·1	183·7	179·1	7·9	1·3
S.I.C. VI—Engineering and electrical goods		295·6	306·6	310·8	305·9	13·5	1·3

Source: D.E.

TABLE 15 Mechanical Engineering. Employment in Sub-regions of the West Midlands, 1969

M.L.H.	Conurbation	Coventry Sub-region	Central Sub-region	North Staffs.	Western Counties	%
331	42·1	0·8	35·8	2·7	18·8	100·0
332	50·4	37·3	10·4	–	1·9	100·0
333	63·7	22·1	11·9	1·4	0·9	100·0
334	17·9	31·6	22·0	0·7	27·8	100·0
335	6·6	84·0	7·7	1·7	–	100·0
336	17·4	28·1	32·6	21·9	–	100·0
337	91·0	1·4	5·0	2·6	–	100·0
338	77·9	5·2	8·7	8·1	0·1	100·0
339	54·2	9·5	24·3	11·3	0·7	100·0
341	77·3	0·6	13·1	5·3	3·8	100·0
342 349	55·4	20·2	16·4	3·2	4·8	100·0
351	72·0	10·6	14·7	1·2	0·5	100·0
TOTAL	56·9	18·1	16·3	4·4	4·3	100·0

Source: D.E. W.M.E.P.B.

shortage of readily available capital and a lack of confidence in the future of the industry.

Research

5.28 The industry appears to be well-provided with research and development facilities. In addition to the Government-sponsored Production Engineering Research Association in Melton Mowbray, there are some specialist research associations and the industry has extremely close ties with the Department of Trade and Industry.

Metal-working machine tools

5.29 The machine tool industry is of particular importance, not only because of its concentration in the West Midlands (31% of Great Britain's employment in the industry), but also because of the dependence of the metal-working industries on it (some 30% of their total capital expenditure represents investment in machine tools). Considerable structural change has taken place in the industry since the war, particularly during the years 1965 to 1968, so that now the five largest firms are responsible for about half the total turnover. This rationalisation is likely to continue only slowly with links being forged between the larger companies and the smaller industrial entities. As in the whole mechanical engineering group, there will remain a place for the small firm.

5.30 There appears to be room for considerable improvement in productivity in the United Kingdom machine tool industry, where the annual turnover averages rather less than £3,000 per employee against nearly £15,000 per employee in the most efficient U.S. companies. Even allowing for the different relative purchasing powers of the respective currencies, there is clearly higher productivity in the United States than in Britain. Amongst the reasons for this are the better engineering design and the larger total market available in the United States. The major factor however, is the lower level of capital investment in the U.K. industry which is not entirely due to volume consideration. Much of the capacity of the British machine tool industry was laid down during the 1914–18 war. Although some of the machinery may be of the latest design, the layout all too frequently has led to inefficiency and excessive component handling. Indeed the industry itself would greatly benefit from the ability to devote more funds to re-equipment out of retained earnings. A census undertaken by *Metal Working Production* in 1966 showed that over 60% of its own machine tools were more than 10 years old and some 30% over 20 years old.

5.31 The machine tool industry is doing much in the development field and the more progressive elements seem to be as advanced technologically as anywhere in the world. The main problem here lies more in obtaining customer acceptance of advancing technology. Field development with customers is being pursued, but costs to the industry are heavy. The Government is assisting with a pre-production scheme under which new designs are bought by the Department of Trade and Industry and placed with appropriate users for test appraisal. This scheme has proved successful.

5.32 Another problem of the machine tool industry is the cyclical fluctuation in demand. This is likely to continue, regardless of the overall economic climate, capital investment inducement or other actions, because about 50% of the demand comes from the motor industry. The latter's tooling expenditure is geared to the production of new models which currently takes place in cycles of 3–4 years. Competition between motor manufacturers leads to most of them bringing out new models simultaneously. There therefore appears to be a need for greater capacity in the machine tool industry to accommodate these cycles.

5.33 Rising output of the machine tool industry over the next five years is expected to call for a marginal expansion of labour, but at the same time for changes in the skills required as products become more advanced technologically. For example, special fitting and assembly skills are required for complicated numerically-controlled machines.

Electrical goods

5.34 In this section of S.I.C. VI, employment fell fractionally from 1961 to 1966 and showed a slightly larger fall in the period 1966 to 1969. Within the group M.L.H. 352, watches and clocks, is so small as not be be significant in the Region. Electrical machinery (M.L.H. 361), the largest in the group in employment terms, has been declining from 1961 through to 1969, as

TABLE 16 Electrical goods. Employment in the West Midlands

M.L.H.		Employees in Employment '000				1969 % of total W.M. Employment	Location Quotient 1969
No.	Title	1961	1966 (a)	1966 (b)	1969		
352	Watches and clocks	1·1	0·5	0·5	0·4	—	0·3
361	Electrical machinery	54·0	46·8	47·4	41·5	1·8	2·1
362	Insulated wires and cables	3·9	4·1	4·1	4·7	0·2	0·9
363	Telegraph and telephone apparatus	10·8	14·8	14·9	17·5	0·8	2·0
364	Radio and electronic apparatus	7·8	10·1	10·2	16·2	0·7	0·4
365	Domestic electric appliances	12·3	9·9	10·1	7·2	0·3	1·2
369	Other electrical goods	37·9	41·3	39·9	39·3	1·7	2·5
All electrical goods		127·8	127·5	127·1	126·8	5·6	1·4
S.I.C.VI.—Engineering and electrical goods		295·6	306·6	310·8	305·9	13·5	1·3

Source: D.E.

TABLE 17 Electrical goods. Employment in sub-regions of the West Midlands,1969

M.L.H.	Conurbation	Coventry Sub-region	Central Sub-region	North Staffs.	Western Counties	
361	47·5	15·5	25·2	11·3	0·5	100
362	5·1	0·2	0·0	94·7	0·0	100
363	4·4	95·3	0·1	0·1	0·0	100
364	45·6	16·5	10·1	23·6	4·2	100
365	57·3	2·6	0·5	36·9	2·7	100
369	85·5	3·0	9·4	0·2	1·9	100
TOTAL	52·2	21·4	12·5	12·4	1·5	100

Source: D.E. & W.M.E.P.B.

has the much smaller employer, domestic electric appliances (M.L.H. 365). The second largest in employment terms, other electrical goods, (M.L.H. 369) showed a rise in employment between 1961 and 1966 but a small decline between then and 1969. The other three M.L.H. in the group all showed rises in both periods. Radio and electronic apparatus (M.L.H. 364) although a comparatively small employer in the Region and with a very low share of the national total in the M.L.H., has shown substantial rises between 1961 and 1969.

5.35 Just over half of the employment in this group is concentrated in the conurbation, but this masks variations in the sub-regional distribution of the M.L.H. Especially notable is the high concentration of insulated wires and cables (M.L.H. 362) in North Staffs. and of telegraph and telephone apparatus (M.L.H. 363) in the Coventry sub-region.

5.36 This group of industries has a higher than average proportion of female labour, about 40%, so that the implementation of equal pay could be significant.

Location

5.37 The West Midlands has a higher than average share of employment in the electrical industry although the Government's industrial location policy is now attracting industry to the development areas. Electrical firms have established themselves successfully in remote areas and shown that it is no longer necessary to be in the centre of industrial activity if they are producing relatively small and expensive goods like electronic equipment. However, the West Midlands remains attractive to further development in the electrical industry as it is the centre of the country's road and rail complex and has easy access to all parts of the country. This particularly applies to the heavy electrical engineering industry, which is already firmly established in the Region.

Rationalisation

5.38 The electrical manufacturing industry has been undergoing major restructuring, which should lead to the concentration of production and to the continued large-scale research and development which are necessary if the industry is to make progress in more competitive international markets in the future. There is still scope for small specialist firms supplying components, particularly to the engineering sector of the electrical industry. However, the success of such manufacturers is dependent upon the success of the big companies whom they supply. They are also especially vulnerable in times of economic difficulty when credit restrictions adversely affect their cash flow.

Technological developments

5.39 In the electrical industry, as in others, there is a search for greater economy in the use of raw materials. Three changes in the use of materials have been noted. First, larger unit sizes in turbo-generating plant have led to the need for smaller quantities of higher quality steel. Secondly, plastic is now widely used, not only for insulation, but as a substitute for metal to save weight and, in conjunction with metal (composites), to give improved properties. Thirdly, affecting especially the manufacturer of insulated wires and cables, is the substitution of aluminium for copper as the result of its high price. Whilst the impact of technological change cannot be precisely forecast, cryogenics, linear motors and electric cars are just three fields where spectacular developments might occur in the near future. However, work on these or any other research projects are of necessity kept secret.

Research

5.40 The Government has spent considerable sums in helping research and development in the electricity supply industry, where work is going on to develop larger turbo-generating units and higher voltage transformers and switchgear. Manufacturers in other sectors of the industry would like similar Government help. But the main weight of research effort is in the electronics and telecommunications field. Large amounts are spent on computers because of their high cost, not only to develop them, but also to sell in the international market. Industrial control and automation is also of growing importance, and is becoming advanced technically. The reduction of fragmentation of research, with the resulting economies, is one argument in favour of large-scale amalgamations within the electrical industry. However, the disbanding of experienced research teams may involve long-term losses which outweigh the immediate saving. The industry as a whole may produce fewer innovations if it loses the variety of approaches which separate research teams would give, but which one large research department might not initiate.

D. METAL GOODS, NOT ELSEWHERE SPECIFIED

5.41 This Order contains many of the traditional conurbation (and especially Black Country) industries. It has a quite remarkable record of resilience to all types of economic downturns, although there are some indications that a rising proportion of its new employment growth has been taking place outside the Region.

5.42 Metal goods, not elsewhere specified, is the fourth largest employer of labour in the West Midlands. During the period 1961–66 it gained in employment terms at a slightly lower rate than did Great Britain. In the period 1966–69, regional employment in this Order fell at a slightly faster rate than in the country as a whole. This industry is highly concentrated in the West Midlands which provides more than a third of the total national employment.

5.43 The behaviour of the different industries within the Order varies. The largest employer, metal industries, not elsewhere specified (M.L.H. 399) which itself provides 7% of the total regional employment, followed the same pattern of employment changes as did the whole Order. Bolts, nuts, screws, rivets, etc. (M.L.H. 393) which is particularly highly concentrated in the West Midlands, showed falls in employment in both periods, although maintaining its concentration relative to Great Britain. Cans and metal boxes (M.L.H. 395) which has a lower than average concentration, and jewellery, plate and refining of precious metals (M.L.H. 396) which has quite a high concentration, followed similar patterns. Both declined in 1961–66, in employment terms and in relative concentration, and continued to decline in 1966–69 but at a rate more close to that of Great Britain. Tools and implements (M.L.H. 391) grew in the period 1961–66 at a rate faster than in Great Britain and then declined at about the national rate over the later period. Wire and wire manufactures (M.L.H. 394) showed a reversal of the pattern of the other industries, having declined in employment terms and in concentration over the period 1961–66, but increased in both in the period 1966–69. The other Minimum List Heading in this Order, cutlery, is not represented in the Region.

5.44 Within the Region, metal goods not elsewhere specified, is almost wholly concentrated in the conurbation which provides 83% of the employment. The only Minimum List Heading where the conurbation is not the major provider of employment is cans and metal boxes. In this industry the conurbation provides 20% of the employment, the Central sub-region 72 and the Western Counties the remainder. There has, however, been a tendency for the conurbation to show marginal losses in its dominance throughout the Order. Female workers provide 38% of the total employment of the Order. In wire and wire manufactures and cans and metal boxes they are below the average, with 28% and 32% respectively, whilst jewellery is well above, with 50% female labour. Between the census of production years, 1963 and 1968, the proportion of administrative, technical and clerical workers rose in relation to the number of operatives in all sectors. In 1968 this proportion was about 22% of the total. This is lower than in the engineering industry, where the proportion is over 30%, but higher than in many other large sectors of industry, such as textiles.

Production

5.45 Production in this Order is cyclical, having reached a peak in 1965, fallen to a low in 1967 and then by 1969 again reached the 1965 level. Many sectors of this group supply large proportions of their production to the automobile industry, and because of this have been affected by Government economic policy decisions. All sections showed considerable increases in net output per head in 1968 over 1963, the average for the group in 1968 being £1765 per head.

Rationalisation

5.46 Rationalisation has been proceeding quite rapidly in this Order over the last few years. The industry has a large number of small units which offer

TABLE 18 Metal goods, not elsewhere specified. Employment in the West Midlands

M.L.H.		Employees in employment '000				1969 % of total W.M. Employment	1969 L.O.
No.	Title	1961	1966 (a)	1966 (b)	1969		
391	Tools and implements	5·8	6·8	6·5	6·1	0·3	2·7
392	Cutlery	–	–	–	–	–	–
393	Bolts, nuts, screws, rivets, etc.	30·1	29·4	30·1	27·4	1·2	8·3
394	Wire and wire manufactures	7·0	5·8	5·0	6·2	0·3	1·4
395	Cans and metal boxes	3·2	2·5	2·5	2·3	0·1	0·7
396	Jewellery, plate and refining of precious metals	11·4	10·2	10·3	8·0	0·4	3·2
399	Metal industries, n.e.s.*	155·9	170·3	169·1	158·7	7·0	4·0
S.I.C. IX	Metal goods n.e.s.	213·4	225·0	223·5	208·7	9·2	3·6

Source: D.E.

* Metal industries, n.e.s., M.L.H. 399, covers the employment of about 75% of this Order. It is not possible to obtain an accurate breakdown of this figure but the following list of the industries contained in the M.L.H. indicates its importance to the West Midlands.
Metal furniture
Metal windows and door frames
Safes, locks, latches and keys
Springs
Drop forgings, etc
Industrial and domestic hollow-ware
Cold pressing, stamping, piercing
General sheet metal working
Making anchors, chains, etc
Grinding, polishing, enamelling and other metal finishing
Miscellaneous activities not separately identifiable

prospects for considerable further rationalisation. However, there will always remain a place for the small company with some specialised skill and, of course, for the innovator.

Technological developments

5.47 Technological changes are occurring quite rapidly in some sectors of this Order, although the volume and cost of many of the operations tend to preclude automation or a high degree of mechanisation. In fact, mechanisation is limited by three major factors. First is the highly skilled labour content in some sectors, second is the large number of small and medium-sized employers, and third is the highly specialised nature of the firms' products coupled with the small unit production of much of the output. In this, as in all the metal-working industries, there is the rising challenge from new materials.

E. VEHICLES AND TYRES

5.48 The motor industry in the United Kingdom is one of the most important contributors to the economic well-being of the country, and no less a contributor within the West Midlands Region. 34% of the total U.K. labour employed directly in vehicle manufacture works in the West Midlands. The Region produces not only 32·5% of all vehicles but also a significant proportion of the components assembled elsewhere by the U.K. motor industry.

5.49 Of all U.K. exports the motor industry accounts for 17% by value, 33·2% of which originate from the West Midlands. In all, the industry is responsible directly or indirectly for 10·6% of all industrial production. Using this as an indication of the importance of the industry to the economy, it is not surprising, although certainly unfortunate, that it has been singled out as a major instrument in Government domestic economic policy.

5.50 The structure of the industry has changed considerably over the years, and a series of complex mergers and takeovers has resulted now in four main organisations.

- a Ford (a subsidiary of Ford of America);
- b Vauxhall (A subsidiary of General Motors);
- c Chrysler (U.K.), (a subsidiary of Chrysler);
- d British Leyland Motor Corporation.

5.51 These moves all support the belief that size is an essential factor for survival in the motor car market. The economies of scale and the benefits of rationalisation and integration will be of critical importance to the future competitiveness of the industry.

5.52 A very important factor affecting the operating efficiency of large international companies is where their home base is located. The world motor industry is increasingly concentrated in ten or twelve major international companies and British Leyland, whose volume car plants and associated component suppliers are located mainly in the West Midlands, is the only international motor company whose home base is the United Kingdom. Unfortunately the United Kingdom is the one major motor market where annual registrations of new cars in 1970 were still lower than 1964 and this stagnation has had a severe effect on profitability and the consequent ability to invest in new plant and equipment of U.K.-based companies.

5.53 The future will probably involve international link-ups for co-operation and further vertical integration by manufacturers towards their sources of supply. It is to be expected that there will be mergers and takeovers within the component industry, mainly for defensive reasons, to compete on an increasingly international level, and to give strength against takeovers by the vehicle manufacturing giants.

5.54 The domestic vehicle market which includes imported vehicles, stands currently at approximately 1·35 million new vehicles annually, of which cars represent approximately 1 million, the remainder being commercial vehicles, a market which is steadily but not rapidly expanding. This domestic vehicle market is subject to considerable Government restraint, which in turn has resulted in under-utilisation of domestic capacity, with usage rates estimated at 64% in 1967 and 73% in 1968. Forecasts for 1972 would appear to show that overall capacity currently available will be sufficient. In practice, however, the question of capacity in this industry is a very complex one because of the varying links between models and geographical separations between plants. Also a margin of spare capacity is necessary to meet seasonal or unforeseen peaks in demand.

Location and communications

5.55 To a vehicle manufacturer who may have as many as 4,000 component suppliers, there is no

TABLE 19 Vehicles and tyres, Employment in the West Midlands

M.L.H.		Employees in employment '000				1969 % of Total W.M. Employment	1969 L.Q.
No.	Title	1961	1966 (a)	1966 (b)	1969		
381	Motor vehicle Mfg	148·2	169·5	169·3	163·6	7·2	3·2
382	Motor cycle, cycle mfg.	18·6	14·4	14·8	13·8	0·6	5·7
383	Aircraft mfg. and repairing	40·4	29·1	29·1	22·1	1·0	0·8
384	Locomotives and track equip.	2·6	0·5	0·5	0·4	–	0·1
385	Railway carriages	8·9	2·6	2·5	2·5	0·1	0·8
389	Perambulators	2·1	1·8	1·7	1·5	0·1	3·0
S.I.C. VIII	Vehicles	220·8	217·8	218·0	203·9	9·0	2·5

Source: D.E.

advantage to be gained from stretching the supply lines farther than necessary, particularly when stock-holding has to be kept to a minimum. It is natural, therefore, that the main assemblers of motor cars should have their beginnings in the major industrial regions near to establishments capable of producing the components required to the standards demanded and necessarily with as little re-training of labour as possible. The West Midlands was such an area, offering a precision engineering tradition and a skilled labour force.

5.56 As a communications centre, the West Midlands was and remains a natural choice, since its central location for the receipt of materials and the distribution of finished products means transport costs can be kept to a minimum. The importance of this central position is likely to increase in the future, with the integration of plants and the development of computer communications between plants and major suppliers. It is probable that computer data transmission by U.H.F. microwave, linking the major factory units, will become necessary if the benefits of large-scale organisation are to be fully realised.

Sources of supply

5.57 The motor industry is a major customer of the capital goods industry, accounting in the 1960's for 9–10% of all capital goods expenditure by U.K. industry, and in addition, 12% of annual expenditure on new buildings. The motor industry directly or indirectly is responsible for some 5·5% of production from other sections of industry, which, together with its own 5·1% of total U.K. production, adds up to the fact that 10·6% of industrial production annually originates from or is dependent upon the motor industry.

5.58 The major part of this contribution by the motor industry is produced in two main regions, South-East England and the West Midlands. These areas account for 70% of total employment in motor vehicle manufacture in the U.K., the split between them being 36% in the South-East and 34% in the West Midlands. As far as components are concerned, however, the main centre of production is the West Midlands.

5.59 Car-producing firms which often buy in 60–70% of components by value are extremely dependent on their suppliers and must, therefore, have reliable sources of supply available at all times to ensure a smooth flow. This is particularly so for components which are bulky and expensive, of which the manufacturer may carry only a small stock, perhaps sufficient for one day's production. High costs for transport, production material control and investment for materials, particularly for bulk sub-assemblies, all foster the development of a highly localised manufacturer/supplier relationship.

5.60 Where the manufacturer is dependent on one supplier for a component, then a curtailment in supply can cause serious stoppages. For this reason many small suppliers still exist—the manufacturers preferring more than one source of supply for vital components. Whilst this may appear less efficient it can be argued that as the smaller firm is often dependent on one manufacturer for his market, he must adopt the most stringent economies to stay in business.

Materials

5.61 Of the new materials, plastics of various types are highly significant. The uses of plastics to date are mainly for interior trim, facia, heating ducts and heater casas, etc., but by 1980 we may well have part-plastic body shells on steel sub-frames or chassis. Before this, however, many components, such as air filters, radiator cowls, fans, etc., can be expected to be manufactured from plastics. There have also been many advances in techniques. Already some forgings have been replaced by either precision-cast parts or sintered parts. Techniques such as close-limit high-speed forgings and cold and warm forming will enable precision formed components to be more cheaply produced because of the reduction in the amount of machining necessary. The consequences of this will be considerable for the machine tool industry, with increasing emphasis on machines for finishing operations rather than heavy swarf-removing tools.

Transportation of vehicles

5.62 The West Midlands motor industry is ideally situated for the movement of vehicles in any direction. About 10% of vehicles for the home market are delivered by rail, and the rest by transporter. On the other hand, 65% of vehicles for export go by rail. About 40% of all motor vehicle exports take the form of C.K.D. (completed knocked down) packs. This method of export must be of considerable significance for the development of freight containerisation facilities in the West Midlands.

Expansion

5.63 Because of its size and widespread nature, the motor industry can exert considerable influence on the general economic climate and thus fluctuations in its trade can have widespread consequences on the rest of the economy. For this reason it has often been the object of Government policies directed at controlling the economy more generally. The plans which the industry has for expansion cannot be achieved unless manufacturers can foresee a competitive return on new investment and an acceptable return on total investment. 'In view of the greater profitability of the home market, such a return will only be achieved with exports expanding against the background of steady growth in home demand. Recent fluctuations in the market have led to uncertainty to companies wishing to plan investment and to a rate of return which is unacceptable in the long-term.'*

5.64 In the past decade there have been dramatic changes in this industry in terms of rationalisation of manufacturers, total volume produced and numbers of people employed. Scooter production has now ceased

Motor cycles

TABLE 20 Motor cycle manufacture in the United Kingdom

	1960	1969
Number of manufacturers	35	8
Total production volume of motor cycles (home and export)	130,400	66,137
Numbers of people employed (estimated)	20,000	6,000

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* Economic Assessment to 1972—Industrial report by the Motor Manufacturing E.D.C., 1970

completely but mopeds, after declining to a figure of 5,000 per annum in 1969, are now reviving.

5.65 Volume production is now effectively in the hands of two major manufacturers, B.S.A./Triumph (Motor Cycle Division of B.S.A.) and Norton/Villiers (part of Manganese Bronze Limited). They are responsible for 93% of production. B.S.A./Triumph, which dominates the industry, is wholly within the West Midlands, as also is the Villiers engine factory at Wolverhampton, Amal (carburetters), Lucas and Miller (electrical) so that a very significant part of the industry and its main component supply sources are in the Region.

5.66 A high export output of nearly 85% by value has been achieved and 80% of these exports go to the U.S.A. The industry is therefore very dependent on this one market. However, it is considered that there is reasonable stability in this market and exports should continue satisfactorily at this or an increasing rate.

5.67 The total employed is comparatively small and there appear to be no major problems in supply although skilled labour in Birmingham is not easy to obtain. It is not considered likely that there will be any significant increase in labour required because, if production increases, manpower increases will to a large extent be offset by improved methods of production.

Tyres

5.68 With the important exceptions of Dunlop and Avon all tyre companies in this country are subsidiaries of American or continental parent companies. The West Midlands has Dunlop, Goodyear, Michelin and Pirelli plants in the Region.

5.69 The proximity to the vehicle industry, the ease of communication to all parts of the country for replacement sales, the strong links with the West Midlands Universities and the existence of a skilled labour force provide strong reasons for the industry to retain a large proportion of its production in the Region.

CHAPTER 6 THE SERVICE INDUSTRIES

TABLE 21 Employment in the West Midlands

S.I.C. Order		Employees in Employment '000				1969 % of Total W.M. Employment	1969 L.Q.
No.	Title	1961	1966 (a)	1966 (b)	1969		
XVIII	Gas, electricity and water	35·3	37·1	37·1	35·0	1·5	0·9
XIX	Transport and communications	103·6	109·5	112·3	102·2	4·5	0·7
XX	Distributive trades	211·4	227·7	222·8	206·2	9·1	0·8
XXI	Insurance, banking and finance	32·3	37·9	37·9	39·5	1·7	0·6
XXII	Prof. and scientific services	168·3	214·3	214·2	237·5	10·5	0·9
XXIII	Misc. services	132·6	159·6	157·1	151·4	6·7	0·7
XXIV	Public admin.	97·7	102·8	102·2	97·0	4·3	0·7
	Total	781·2	888·9	388·6	868·8	38·3	0·7

Source: D E.

Present trends

6.1 The figures above show the trends in service employment and its absolute size together with the location quotients for 1969.

6.2 The total service sector, including both what can be broadly described as public services such as S.I.C's. XVIII & XIX and the wide range of private services that come under other headings, employs some 38% of the working population of the Region. All the classifications show a location quotient of less than unity, even though some of them, particularly the public services, could be expected to be in direct proportion to the population of the West Midlands. To the extent that the lower than average location quotient of the service industries is a corollary of the higher than average concentration of manufacturing industry in the Region it raises no issue of policy. If, however, the lower than average location quotient reflects a weakness in the basic structure of services in the Region, then this would give cause for concern as it would imply that the regional rate of growth of the service industries would be below the national one.

6.3 The question whether the service industries will grow fast enough to provide the employment opportunities that the Region needs is not one that can be answered categorically without obtaining more information than the Working Party could collect on the precise situation and prospects of each of the very different sub-sections covered by this general heading. What we would need to know for each sub-section that has a low location quotient are the reasons for this position.

6.4 If, for example, wholesale and retail distribution have location quotients of 0·8 and 0·7 respectively because of the population density in the Region, then this is a structural consequence which is likely to continue and calls for neither action not concern. This proposition could be confirmed if we know how the Region compared in terms of the turnover of shops of a given size and of the average value of goods bought for each shopping occasion. We have had help from the Distributive Trades E.D.C., but it does not have figures on a regional basis, although it may well wish to collect them in future as regional comparisons could be helpful to the E.C.D. itself in deciding on its own priorities.

6.5 If, however, to take another example, the location quotient for medical and dental services is low because doctors and dentists do not want to work in parts of the West Midlands, then this does raise important questions of policy. Ways of meeting this situation would include paying more to those who work in the areas where amenities are least satisfactory, or making a long-term investment in improving the amenities in those areas.

6.6 Apart from having to ensure that any recommendations about the future of the service industries are appropriate to their needs, they cannot all be treated alike on the basis of crude employment figures. Some services may be provided by outside firms, or by specialised departments within large companies. So long as the employment opportunities are available in the Region, the difference is simply one of structure. The statistics for the service industries taken on their own could, therefore, be misleading as an index of the opportunities for employment in those industries. The pattern here is changing with a trend towards specialist services being provided more from outside manufacturing companies than from within. At the same time, these specialist services are themselves becoming broader and more complex. Steel stockholders, for example, now offer a wide range of processing operations, so that their customers can receive sheet or plate to their exact size and specification.

6.7 The other points that are not taken into account by looking simply at the numbers employed, are first, which are the essential services from the regional point of view, and secondly, which are those whose future can be influenced by action within the Region.

6.8 The essential services are those which are expected to grow fast in the years ahead, those on which the efficiency of existing industry depends, and those which attract other services. Examples of these are computer services in the first category, and insurance, banking and financial services in the second and third. Unfortunately, there is not much research on which to draw to determine what services an industrial complex the size of the West Midlands could expect to generate and how the various services are related to each other in terms of drawing power. Most of the work on the classification of services approaches the question from the other end, and draws deductions about the nature of the Region or the city from the degree of specialisation of services to be found in them.

6.9 The following chapter deals with transport, water resources, gas and electricity and so S.I.C. XVIII (Gas, Electricity and Water) and S.I.C. XIX (Transport and Communications) are not covered separately in this chapter. The numbers employed under these two classifications have varied little between 1961 and 1969 and are not expected to change significantly in the next ten years.

Distributive trades (S.I.C. XX)

6.10 In the last decade there have been considerable changes in the pattern of wholesale and retail distribution, marked by the growth of the chains and multiples and the decline of the small independent shop particularly in the grocery trade. In food distribution again there has been considerable increase in the proportion of the trade covered by the symbol groups which provide closer links between wholesalers and retailers. Cash-and-carry and discount stores are developing fast and are having an impact on the wholesale trade and to a lesser extent on retailing.

6.11 The location quotient for wholesale distribution in the West Midlands was 0·8 in 1969 having risen since 1961, while that for retail distribution was 0·7 in 1969 having fallen over the same period. The biggest change has come under the heading 'Dealing in other industries' where the location quotient of 1·0 in 1961 has gone up to 1·2 in 1969.

6.12 As was said in paragraph 6.4 we have not been able to determine the reasons for the relative under-representation of wholesale and retail distribution in the West Midlands, because of the lack of specifically regional information. The most likely explanations seem to be the density of population and the absence of certain specialised types of shop due to the ease of access to London. Even if the comment in *British Tastes** were true that 'Midlanders do not shop, they stock up' it would hardly account for these figures. It is also possible that the growth of out of town shopping areas has been inhibited by the natural disinclination of local authorities to see a reduction in the income they get from their High Streets.

6.13 The rise both of the location quotient and of the numbers employed in 'Dealing in other industries' is due to the West Midlands becoming increasingly a major centre for warehousing and distribution. This trend is encouraged by the fact that buildings intended for distribution do not require i.d.c.'s and by the growth in the Region of specialised services to industry such as steel stockholding. In the food trade this applies also to products like frozen foods, which require specialised storage and distribution facilities. The extension of the existing motorway network and the development of more rapid freight services by rail, combined with the availability of larger and faster commercial vehicles, is reducing delivery times from central warehouses and putting a premium on central locations like those in the West Midlands with easy access to road and rail.

6.14 From an employment point of view the reduction in man-power in distribution is expected to continue nationally and in the Region. This will not greatly affect the numbers employed in wholesale and retail distribution, because of the increase in part-timers, although the average hours worked by part-timers will probably fall. The percentage of part-timers has gone up from 26% in 1961 to about 34% in 1968 and is estimated to reach 38% in 1972. This growth is due to the trend towards longer shopping hours and to the increasing proportion of trade being done by the larger shops, which can be more flexible over hours, employing women, for example, on evening shifts.

6.15 In the period 1966–68 there was a marked increase in sales per person employed over 1961–66 in the country as a whole. Most of this increase came in 1967, although the increase in 1968 was still slightly above the 3% per annum average for 1961–68. The annual rise since 1961 has been due to improvements in techniques and it seems likely that the imposition of Selective Employment Tax in 1966 accelerated the trend. Since S.E.T. had a once-and-for-all effect, the rate of sales per person is expected to increase at an average rate of 3% per annum at least up to 1972. The greater use of modern methods of data processing is not thought likely to have a significant effect on employment or to do more than keep pace with the growth in the complexities of distribution.

6.16 The size of firms in the distributive trades varies widely. The industry has a large number of small firms, who have little or no access at present to the know-how available to larger units. The Distributive Trades E.D.C. believes that the performance of many firms could be improved by better stock control, staff training, shop layout and methods of handling goods. There are consultancy services available to the distributive trade and every encouragement should be given to firms in the Region to make full use of them.

Insurance, banking and finance (S.I.C. XXI)

6.17 The general position can be summarised on the evidence given to the Working Party by saying that no major change in emphasis or employment is anticipated over the next 10 years, with the possible exception of the building societies. The existing services will expand to meet the demands of the growth areas within the Region, but it is envisaged that the additional staff required would largely be available as the result of the surplus labour arising from computerisation and rationalisation. These comments take into account the effects of the recent bank mergers, the Post Office Giro, the payment of wages by cheque, and the changes in banking hours.

6.18 In banking it is felt that the rationalisation of branches as the result of mergers will be a slow process and the potential staff savings involved will be absorbed by natural wastage and the need for new branches in the growth areas. Computerisation is now well advanced in all banks, a process that began with the larger branches, and it is only in these that real staff economies have been possible. Any reduction in staff as smaller

*D. Elliston Allen, *British Tastes*, Hutchinson, 1968 offices come on to computer working is likely to be marginal, and improved systems could mean an increase in business without a proportionate increase in staff. The relative proximity of London is not regarded as significant so far as future developments or staff requirements are concerned.

6.19 For insurance, there is no single pattern of development which would enable future staff needs to be forecast, as much depends on whether the business keeps its present structure or follows the American pattern by developing counter sales in department stores. It is possible, however, that branches will require a higher percentage of technical sales staff. The conurbation is regarded as being ideally located for insurance because of its central position and increasingly good road and rail communications.

6.20 There are some 50 head offices of building societies situated within the Region, controlling a network of about 250 branches. The centralisation of accounting records in head offices introduced by the use of computers, has resulted in branch office staff being reduced to the minimum needed to provide a mortgage and investment service to the public. Nevertheless, an expansion rate of about 13% per annum in numbers employed is anticipated in the immediate future if home ownership continues to grow as it has done in the last 15 years.

8.21 Other sections covered by this classification include credit instalment companies where growth is expected, although the numbers involved are small. As with insurance, the Region's share of employment could grow if more was de-centralised from the South-East.

6.22 Merchant banks comprise another section which is small in employment terms but of importance because improved merchant banking facilities in the Region will not only encourage the growth of other financial services, but also be of direct service to West Midlands industry as well. The provision of branches of the main overseas banks in the regions comes to some extent in the same category. The growing number of branches of both merchant and overseas banks is a welcome development of the past few years, but for it to be fully effective it requires that these branches should undertake locally the complete range of relevant services and not be simply the outposts of London main offices. The number of stockbrokers is likely to remain fairly static with the regionalisation of the provincial stock exchanges. If the Midlands and Western Region Stock Exchange becomes more closely associated with the London Stock Exchange, expansion locally will be even more limited.

Professional and scientific services (S.I.C. XXII)

6.23 The Working Party has no comment to make on M.L.H. 872, which shows that in terms of numbers the Region is on the national standard for educational services. The question of education in relation to the Region's economic prospects, which is of crucial importance, is discussed in paragraph 7.42 et seq.

6.24 In considering M.L.H. 871, the point has already been made that some services can be provided, either by specialist firms or by departments within large companies. The increasing size of companies and their tendency to employ a higher proportion of professionally qualified staff, mean that more of their total accountancy work will be carried out inside the company. At the same time, the complexities of taxation and the growing amount of financial information that is statutorily required, should lead to an increasing demand for the services of specialist firms as well.

6.25 The limitation on the growth of accountancy services in the Region could be the tendency for the central control of industry to move out of the West Midlands and so for a larger proportion of top-level accountancy work to be carried out by professional offices in London. The number and quality of recruits for the profession regionally is improving, but a continued shortage is foreseen for many years ahead. Once qualified, it is not anticipated that many accountants would leave their home regions except to work in London. Factors that would improve the relative position of the West Midlands include more large industrial companies having their headquarters in the Region, and merchant banks and finance houses carrying out their top-level business with West Midlands industry from their regional offices.

6.26 In the field of accountancy training, the success of the polytechnics with their new 9-month introductory courses, could have a substantial effect on the attraction of the profession to 'A' level boys and girls in West Midlands schools, and to their careers advisors. At the same time, the greater spread of management training throughout business in the West Midlands will

TABLE 22 Employment in the West Midlands

M.L.H.		Employees in Employment in ('000) the West Midlands Region				1969 % of W.M. Total	1969 L.O.
No.	Title	1961	1966 (a)	1966 (b)	1989		
871	Accountancy services	6·5	6·7	6·7	7·0	0·3	0·7
872	Educational services	88·2	114·7	114·7	131·3	5·8	1·0
873	Legal services	6·0	7·4	7·4	8·0	0·4	0·7
874	Medical and dental services	57·2	72·7	72·9	78·1	3·4	0·8
875	Religious services	0·9	1·2	1·2	0·8	—	0·4
879	Other professional services	9·5	11·8	1·3	12·2	0·5	0·8
	Total XXI	168·3	214·3	214·2	237·5	10·5	0·9

Source: D.E.

make managers more aware of the help that accountancy services can provide.

6.27 No specific evidence was received in regard to M.L.H. 873, but some of the considerations affecting accountancy services will no doubt apply to legal services as well.

6.26 The position of medical and dental services in the Region (M.L.H. 874) is one of a shortage of manpower, as the following table indicates:

TABLE 23 General practitioners (medical and dental) 1969

		England and Wales	W.M. Region
Medical	Principals	20,133	1,970
	Average list size	2,479	2,643
Dental	Principals	10,177	795
	Assistants	482	30
	Persons per dentist	4,557	6,151

Source: D.H.S.S.

This shows the number of doctors and dentists in general practice in the Region to be some 6% and 36% below the national average. Other branches of the health service are in a similar position, in spite of all that is being done to attract staff. The Region is particularly active in the recruitment of nurses, and in the provision of further education facilities for the trained nurse and trainee pharmacists and technicians.

6.29 The main deterrent to the recruitment of more doctors and nurses to the Region is the attraction of the South-East and the poor amenities in parts of the West Midlands, including under the heading of amenities, old hospitals, areas which are not pleasant to live and work in, and the lack of facilities like good local schools in those areas. This means that the problem is greater in the Black Country towns and the heart of the conurbation than it is in cities like Shrewsbury and Warwick, and in the dormitory towns.

6.30 Nevertheless, the Region does have considerable advantages on which to build, such as having a first-class teaching hospital in the Queen Elizabeth on the same site as Birmingham University. The proximity of the medical school and its undergraduate teaching hospital to a major university and the resulting interchange of ideas, has already made a unique contribution and will develop further as the university grows and the Queen Elizabeth is extended. A liaison with major hospital centres has been built up by the other three West Midlands universities. No decision has yet been taken on the location of a second medical school in the Region. The Regional Hospital Board has supported a considerable post-graduate training programme and developed training in clinical research, operational research and management practice.

6.31 A good standard of medical and dental services is not only essential in itself, but it is also an important feature of the total amenities of the Region. In addition, industry has a direct interest in any reduction in time lost through sickness and accidents. There is therefore a need for close liaison between industry and doctors, over such issues as rehabilitation in the interests of the patient as well as those of industry.

6.32 The availability in the urban areas of suitable premises for doctors and dentists is important and they should receive every planning encouragement to practise where it suits their patients and themselves. It is also usual for consultants to wish to concentrate in specific districts and this should be facilitated wherever possible. Such concentration has practical advantages as well as encouraging the development of specialist medical and dental services.

6.33 The main way to increase the number of those in the medical and dental services in the West Midlands would be to invest more in improving the Region's hospitals. The size of the investment needed is a reflection of the inadequacy of past expenditure on hospitals in the Region. A more effective differential salary scheme could also be considered to alter the balance of attraction between the West Midlands and the South-East.

6.34 M.L.H. 879, other professional services, whilst not large in employment terms, is important by the nature of the services it covers, and by the contribution that it makes to the range of employment opportunities available in the Region. Two groups that come under this heading, architects and management consultants, gave particular help to the Working Party and certain points that they raised have general application.

6.35 Architects operate in four major fields, in private practice, in the public sector, in industry and in education. The proportion engaged in private practice has steadily declined to about 45% of the total, whilst the proportion in industry and the public sector has increased. The factors affecting the demand for architects in the West Midlands include:

- **a** the amount of building work in the Region, which declined in value terms between 1963 and 1969 due to high land values, lack of industrial growth and Government regulations.
- **b** the proportion of work put out to private practice by the public sector which is likely to diminish as the re-organisation of local government will result in fewer larger authorities. This would not necessarily imply a countervailing increase in the number of architects employed by local authorities.
- **c** the effect of industrial mergers and the movement of business headquarters out of the Region, which can lead to the appointment of London architects.
- **d** the growth of contractors providing a complete service, including all architectural work. In the main this growth is outside the West Midlands and at the expense of smaller regional contractors who do not supply an inclusive service.

6.36 In considering the ability of the West Midlands to attract architects, reference was made to us of the 'undeserved public image' of the Region, and the difficulty of recruiting against competition from London and the South East. While the training provided at the School of Architecture, affiliated to the University of Aston, was considered excellent, the funds and facilities of the school were described as grossly inadequate. On the other hand, since architects normally visit their clients rather than the reverse, the central position of the West Midlands and its good communications could make the Region an ideal location for architectural practices, particularly as office and salary costs in London escalate.

6.37 Management consultancy is an example of a service industry the growth of which in the Region could be expected to have an influence on regional development well beyond the employment it creates.

If good management consultants are available locally, they will be used by firms that would not readily call in experts based on London or New York and they will acquire expertise in the problems of local firms. Such a growth could also be expected to encourage management training and development, the implementation of modern management techniques and closer links between industry and institutes of further education.

6.38 The rate of expansion by qualified consultants in the Region is forecast as 100%–150% over the next 10 years, with probably some decentralisation to the West Midlands of what are at present regarded as specialist activities for the large firms. The ability of the West Midlands to attract management consultants would depend on the level of activity of industry in the Region, and the degree to which it obtains new growth industries; on good local communications, and on the receptiveness of West Midlands management to the use of consultants. The comment was made by one firm that few of their senior staff came from the West Midlands and that this reflected an inward looking attitude by management in the Region. In addition to stressing the importance of management training facilities in the Region, emphasis was put on the need for a major business school in the West Midlands, a view which we would support.

Miscellaneous Services (S.I.C. XXIII)

TABLE 24 Employment in the West Midlands

M.L.H.		Employees in Employment in the ('000) West Midalnds Region				1969 % of W.M. Total	1969 L.Q.
No.	Title	1961	1966 (a)	1966 (b)	1969		
881	Cinemas, theatres, etc.	7·2	5·7	5·7	5·2	0·2	0·4
882	Sport and other recreation	3·4	5·1	5·1	4·9	0·2	0·7
883	Betting	0·9	2·4	2·4	2·8	2·1	0·5
884	Catering, hotels, etc.	38·7	42·4	42·4	41·4	1·8	0·7
885	Laundries	10·7	9·6	6·6	6·6	0·3	0·8
886	Dry cleaning, job dyeing, carpet beating, etc.	3·3	3·4	3·3	2·6	0·1	0·7
887	Motor repairers, distributors, filling stations	29·9	43·3	40·7	38·7	1·7	0·9
888	Repair of boots and shoes	1·6	1·4	1·4	0·8	0·03	1·1
889	Hairdressing and manicure	8·1	9·3	9·3	7·6	0·3	0·8
891	Private domestic service	14·2	10·7	10·7	8·8	0·4	0·4
899	Other services	14·6	26·3	26·5	32·0	1·4	0·7
S.I.C. XXIII Total		132·6	159·6	157·1	151·1	6·7	0·7

Source: D.E.

6.39 The largest employer of labour in this Order is M.L.H. 884 (catering and hotels), but there is a lack of both national and regional information about its development. It would appear from the available data that in the past the potential of the hotel and catering services in the Region has been underestimated. With the stimulus of the English Tourist Board and of the Hotel and Catering E.D.C. there should be a faster rate of growth in this industry and it should be possible to obtain a more accurate picture of its progress.

6.40 Apart from the obvious attractions of such areas as Stratford-upon-Avon or the valleys of the Severn and the Wye, the West Midlands has many places of interest to tourists and may soon have the National Exhibition Centre which is considered in more detail in Chapter 8. The opening of the N.E.C. will require new hotels to be built in the Region. Already there are some 4,300 new hotel rooms either planned or being built within twenty miles of the N.E.C. There is in addition a steadily rising demand for good quality hotel accommodation; sales representatives are no longer prepared to stay at the old-fashioned type of commercial hotel.

6.41 The hotel and catering industry in the West Midlands has good growth potential and its contribution to the country's invisible earnings will increase in the next few years in line with the growth of tourism and of business visitors. The development of more hotels and catering establishments will indirectly lead to the provision of new facilities for recreation and entertainment which will improve the amenities of the Region.

6.42 The other main employer in this classification is M.L.H. 887 (motor repairs, etc.) which showed a considerable increase between 1961 and 1969. Motor repairs and hotels and catering account for over half of all those employed in the miscellaneous services.

Factors affecting growth

6.43 It is not felt that the employment position in the Region will hold back the growth of services, although there is evidence of a shortage of labour, and lack of expertise at the skilled clerical level. This is not, however, peculiar to the West Midlands. There is a need for more training in business administration. Whilst education authorities meet these demands where they can, some courses, such as those for computer training, can only be provided in the major centres. School leavers are not always aware, either of the opening available in the service industries, or of the further education facilities that will equip them for these openings. This is a situation which would require study by the Local Education Authorities, the Central Youth Employment Executive and the Department of Education and Science.

6.44 There is scope for greater co-operation between the professions and the universities, particularly over the tieing in of the university and professional examinations. Closer collaboration between the professions and the universities on the subject matter of courses could result in university qualifications earning more exemptions in professional examinations. The Region is well placed to encourage this co-operation, and to benefit from it as it would increase the relative attractions of professional services.

6.45 Small firms in the professions are expected to play a less significant part than they have in the past. This trend has already been observed in architecture. In law and accountancy there is a growing need for specialists, but this is being met more through the formation of larger partnerships than by separate small firms. The effect of concentration is only adverse to the Region if it results in a movement of services out of the West Midlands because the headquarters of large firms are more likely to be in the South-East. On the question of premises for service industries, the Working Party felt that while there had been some shortage of suitable office accommodation as a result of the o.d.p. restrictions, the situation was now more in balance. The pattern of office employment has changed over the last few years with the growth of new centres such as Edgbaston and Solihill. To the extent that the Region is short of services, it must give full support to those areas that are capable of attracting them.

6.46 There is a particular need for office development in the overspill areas at a rate which will be in line with the movement of industry and with the demand for jobs for the wives and children of the men working in that industry. If changes in the structure of local government lead to fewer larger authorities, then offices will be drawn to the new centres of local government as happened after the Black Country Review. In effect, now that o.d.p. controls have gone, all that is required to ensure that the expansion of the service industries is not held back by the lack of suitable accommodation is for structure plans through the Region to recognise the economic importance of providing for growth in this field.

6.47 The importance of the Region's infrastructure* to the growth of the service industries is clear as on the whole, services are less tied to a particular location than manufacturing, and so will expand where conditions favour them. Since there is also a tendency for services to congregate because of external economies, the process can be self-reinforcing. Infrastructure is dealt with in more detail in Chapter 7 but it is worth summarising the different aspects of it that were referred to by representatives of the service industries

a *Communications*
Good communications are essential if the Region is to make the most of its geographical position.

b *Amenities*
Good social, recreational and welfare amenities are important, including schools, medical services, facilities for leisure activities and being able to get out into the country.

c *Education and training*
Good educational and training facilities within the Region mean both that the needs of the service industries in this respect can be met, and that there will be local awareness of what the service industries have to offer in the way of specialist advice and assistance.

Economic balance within the Region

6.48 The main attraction of the Region to the service industries will be the range and interest of the opportunities open to them in the West Midlands. The greater the rate of economic growth in the Region and the more advanced the industries represented, the more chance the West Midlands has of improving the relative position of its service industries. This is a field in which it is essential to establish more economic facts on which to base policy. At present there is no evidence to support the view that past trends will change, and that a faster rate of growth of the service industries is likely over the next 10 years. This view would be changed by:

a a positive industrial policy geared to growth
b more investment in the Region's infrastructure
c direct action to assist the service industries.

6.49 Action in the last category would include

i Educational facilities geared to the needs of the service industries and the establishment of a major business school.
ii Closer links between the professions and the universities.
iii Adequate office building in the overspill areas.
iv Supporting the development of those areas in the Region that are capable of attracting service industries.
v Development of tourism and of the Region as a conference centre, backed by support for the proposed National Exhibition Centre.
vi Industry and public bodies in the West Midlands making full use of what services are available in the Region and encouraging the development of of local branches.

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* Infrastructure is economist's jargon for the underlying or basic resources of the economy such as roads, housing, schools, hospitals, power installations and water supply. Infrastructure and economic activity are therefore clearly related and one of the key economic planning questions is the balance of investment between them.

CHAPTER 7 REGIONAL RESOURCES

7.1 This chapter covers the economic aspects of the physical and social background to the West Midlands. The resources discussed are important to industry in the Region in several ways. In the first place they represent direct costs and benefits to industry and their effectiveness in relation to similar resources in other regions affects the competitive ability of West Midlands industry. Secondly, these resources are a factor that industry takes into account in deciding where to expand and invest; the influence of good communications on location being a straightforward example of this point. Finally the provision of many of these resources is a source of employment and so adds to the range of job opportunities in the Region.

7.2 The degree to which our headings can be isolated in relation to the Region varies. Some, like the provision of water and sewerage, can be closely related to the needs of the Region in terms of cost and end use. Others, like further education, serve a wider area than the West Midlands but have, nevertheless, a direct impact on the Region in which they are sited and it is in this context that we have reviewed them.

Water and sewerage

7.3 Water and sewerage is taken first because the problems involved were referred to at many of the Working Party's discussions and there is a real danger that, unless more vigorous action is taken, inadequate sewerage facilities in particular will act as a brake on the development of the Region.

7.4 The demand for water is increasing faster than the growth in population and averages 3% per annum for the country as a whole. Just over one-third of this demand is for domestic use and the remainder is for use by industry and agriculture. Most of the domestic and industrial water is discharged into sewers after it has been used, which gives a daily flow of 60 gallons per person. The supply of water and the disposal of sewage are therefore part of the same cycle and need to be considered together.

7.5 The present demand in the West Midlands is met mainly from ground water supplies, with three of the five Water Board groups abstracting from the Severn. The anticipated demand over the next ten years will be met by taking more water out of the Severn and to do this more reservoirs have to be built to maintain the Severn as a regulated river.* It will be possible therefore to satisfy the demand for water in the Region but at a cost, with a loss to the countryside through building more reservoirs and with direct consequences for sewage and pollution.

7.6 The conurbation lies on a watershed, with the Stour draining into the Severn to the West and the Teme into the Trent to the East. This large industrialised area has only these two outlets to the sea for its effluent and at the same time the West Midlands intends to make more use of the Severn as a source of water and the East Midlands wishes to do the same with the Trent. If the Region's rivers are to supply more of its water, they cannot carry more of its effluent as well. The situation is particularly bad to the East, where the main outflow of effluent already goes, as the Tame is grossly polluted and fishless throughout its length, which has its inevitable effect on the condition of the Trent. The proposal to take more water out of the Severn and in consequence put more effluent into the Trent will make the present bad situation worse.

7.7 Looking first at the consequences for housing, we find building restrictions in force in several areas as a result of inadequate sewage facilities; in 1969 seventeen housing authorities had to operate such restrictions. It is true that some of these restrictions were temporary, but they do indicate the seriousness of the existing situation, let alone the Region's ability to deal with the needs of the future. Further local authority investment is required just to meet the present demands on the Region's system of effluent disposal. The siting and construction of large-scale new sewage works is inevitably a slow process.

7.8 The implications for industry are equally serious. Some 2%—15%* of companies' capital expenditure is already connected with effluent disposal and if the increased flow from West to East is not to result in worse pollution, it must mean improving industrial effluent standards at an unknown cost. The location of industry and particularly the location of new industrial development is increasingly influenced by the availability of water and of adequate facilities for effluent disposal with some guarantee of continuity.

7.9 The Working Party feel that the situation with regard to water and sewerage in the West Midlands requires urgent attention on a regional basis. It is not simply a question of meeting the present level of demand extended into the future, which would be difficult enough and would mean action now on a scale for which there is not as yet any evidence. The whole field of water supply however is one over which there is a natural public concern to see an improvement in standards. In so far as industry has an interest in the value of the Region's amenities it has a direct interest itself in supporting this desire for cleaner rivers and canals, quite apart from its responsibilities as a corporate citizen. What is lacking at the moment is any information on the likely range of costs for a given improvement in water standards and how these costs might be shared. This would seem to us to be the first requirement in assessing what the regional plan of action should be.

7.10 There are other points that should be taken into account in tackling the difficult and complex problems that water and sewerage raise:

a consider ways of reducing domestic water consumption such as smaller lavatory cisterns, or introduce where feasible the Swedish vacuum system which uses air instead of water to carry

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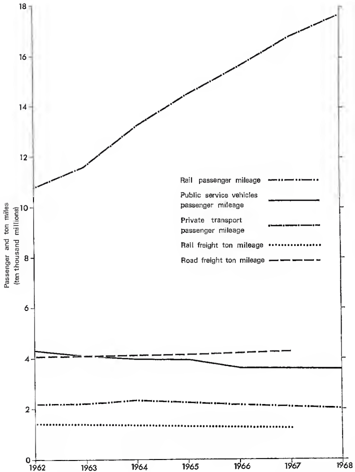
* River regulation enables a river to serve as an aqueduct from which water can be drawn directly.

* In evidence to the Ministry of Housing and Local Government Working Party chaired by Lena Jeger, M.P., the C.B.I. stated that capital expenditure on effluent treatment was in the range of 2%–15%, the proportion varying from one industry to another.

PASSENGER AND GOODS TRANSPORT IN GREAT BRITAIN

PASSENGER MILEAGE 1962-68 TON MILEAGE 1962-67



See paragraph 7.15

Source : D O E

sewage and cuts the amount of water used by the average household by 30%; separation of real sewage from other household waste water might also help cut the cost of treatment;

- **b** encourage industry to recirculate more of its water, to segregate effluent by degree of pollution where possible and to consider using a lower standard of water for certain purposes;
- **c** to review the system of grants and allowances to industry and local authorities in order to promote investment in effluent treatment; under the old grant system a company received a grant for plant it installed itself, but not where it made a capital payment to a local authority to undertake the same investment;
- **d** to ensure that the responsibility for water and sewerage is organised in such a way as to enable the problem to be tackled effectively; this includes bringing water and sewerage under a single authority since sewage is 99·9% water; it means also that such authorities should be of a size to invest in up to date large scale treatment plants and that there should be a single authority responsible for planning applications, with whom industry could keep close contact.

7.11 At present only housing developments have been held back through inadequate sewage facilities, but this in itself has economic implications for industry and the next stage could involve delays to industrial development as well. Because of the Region's geographical situation the potential costs for industry of improving the standard of water in the West Midlands are high. To ensure that the progress of industry is not hampered by lack of facilities and its competitiveness is not undermined by the size of its water and sewerage charges, it is essential that a regional strategy for water resources should be prepared and costed as a prelude to action which is already overdue.

Transport and communications

7.12 The West Midlands is dependent on an effective system of communications if it is to make the most of its central position, particularly in the light of entry into Europe. This dependence is reflected in a number of ways. Communications are an important factor in location decisions, rated only just below government inducements and a firm's other locations in a recent Government departmental study into location attitudes and experience. Good access to ports is essential for a major exporter like the West Midlands which is also the only inland region. Transport costs are an important element in industrial costs and for many companies are growing rapidly. Finally, freedom of movement is important to the individual and has consequences for the changing pattern of living and working.

7.13 It is convenient to consider transport and communications under the main headings of road, rail and air and to subdivide further by passanger and freight. This should not obscure the fact that they are all inter-related and that what we are concerned with is the overall pattern of communications and its ability in the future either to promote the growth of the Region or hold it back.

Roads in the Region

7.14 Expenditure on roads in the Region has increased sharply from the actual average level of £22·4m for the five year period 1964–1969 to a figure of over £45m. for the period 1969–1971. The Region's share of the nation's spending on roads has gone up, due largely to the position of the Region at the centre of the motorway network.

TABLE 25 Expenditure on new and improved roads in the West Midlands excluding spending on land

£.M.

Actual spending	1967/1968	23·5
Provisional estimate of spending (in terms of 1969 prices)	1968/1969	33·3
Forecast of spending (in terms of 1969 prices)	1969/1970	47·8
	1970/1971	45 to 47·5*

*These figures are approximate

Source: D.O.E

7.15 The increased use of road transport in the country as a whole can be seen in Fig. 17. This shows a steady increase of about 10% per annum in private transport passenger miles, a slight increase in road freight ton miles and a decline in public service vehicle passenger miles. We do not have separate figures for the West Midlands but they are likely to be broadly in line. Road freight ton mileage would probably show a rate of growth above the national average as 89% of the goods produced by industry in the Region are carried by road.

7.16 The serious situation from industry's point of view is shown in Fig. 18 which gives the percentage overloading in 1969 on the main West Midlands roads. Industry uses the roads to move components or semi-processed materials from one location to another and the specialised nature of firms in the Region and the linkage between them make this a particularly important facet of communications. The roads are also the main means of getting finished products to distributors or to the ports for export.

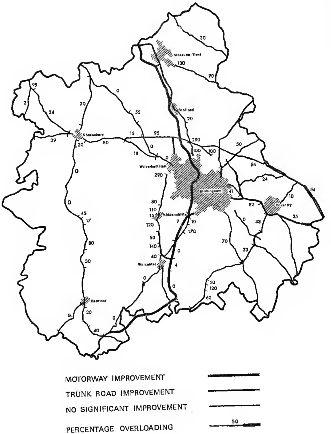
7.17 The main question before the Working Party therefore was whether the forward programme for roads was adequate in the light of the present overload. Fig. 19 shows the roads already programmed, in the preparation pool or being studied. In the first category come the motorway links and the trunk road improvements between Birmingham and Derby/Nottingham and the Potteries and Derby. In the second category comes the completion of the motorway box with the M5, M1 Kegworth connection, the M6 to Telford motorway and the improvement to the A49 Hereford–Shrewsbury road. Roads being studied include a new high grade road between Birmingham and Oxford, a new route between Coventry and the M1 near Leicester and a new link between the M5 and M1 (Strensham to Solihull section). The need for a high standard road between the Potteries and the East Midlands is recognised, and is now the subject of detailed studies. Adding a third lane to the M5 is a necessary improvement which has been omitted from the programme.

7.18 Our view is that the adequacy of this programme depends on its timing. The priorities seem right and all the roads mentioned should give a good return on investment, recognising the limitations of these calculations. If this programme can be carried through by

Fig18

West Midlands

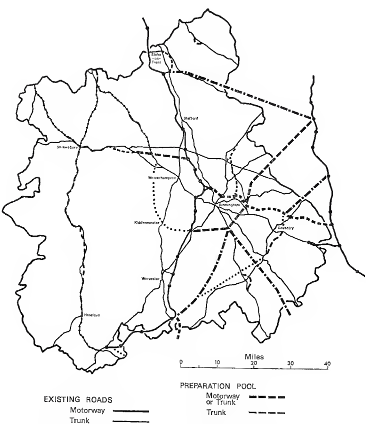
ROAD IMPROVEMENTS 1946–1970 AND OVERLOADING 1969



See paragraph 7.16

Source DOE

West Midlands
ROADS
Programmed and Future Possibilities



(As from Jan. 1971 or under construction Dec. 1969)

See paragraph 7.17

Source D O E

1977/1978 it will make a real contribution to the growth of the Region and should help to prevent road congestion with all its costs from increasing. As the vehicle figures show in Table 26 the peak period of growth is up to 1980 and so delays in meeting the suggested dates will result in a relative worsening of the position.

TABLE 26 Road Research Laboratory 1969 predictions for road traffic growth U.K. (millions of vehicles)

1970	16·0
1980	24·6
1990	30·1
2000	34·2

7.19 Consideration should also be given to the way in which road building is administered. There are two particular aspects here, the first being the links between the national road programme and that of the local authorities. The improvements to trunk roads must be closely tied in with the development of the minor road network and urban traffic control, if congestion is not simply to be moved from one point in the system to another. The second aspect is an example of the wider question which is dealt with later of the relationship between central government and the regions. This concerns the importance of relating government expenditure on roads in the region to their investment plans for the region. Work on the new town of Telford was started before proper road links had been established. Many of the difficulties in promoting its early development would have been avoided, if the road investment decisions had formed part of the overall new town plan from the outset. It is therefore essential for the road investment priorities to be assessed from within the Region, if the best return is to be achieved on the large sums of money involved.

Rail, passenger and freight

7.20 The rail network for the Region and the way in which it has changed since 1965 is shown in Fig. 20. As a result of electrification there has been a substantial increase in passenger traffic, particularly between Birmingham and London. On the freight side the development of containerisation and the opening of the freightliner terminals at Dudley and Lawley Street, Birmingham have checked the fall in rail freight and rail may have slightly increased its share of the carriage of goods other than solid fuel in the Region. The West Midlands has two 'inland ports' at Perry Barr and Landor Street, Aston, which are developing steadily and where the port facilities, including customs clearance, for road and rail are contributing to speeding up freight movement. Even the freightliner service depends on road movement to the terminals and so while it reduces the pressure on trunk roads it increases the demands on the already congested urban road system.

7.21 Forward plans for rail, apart from the introduction of the experimental Advanced Passenger Train capable of reaching 150 m.p.h., centre on developing and improving the inter-city services and on the progess of electrification. This will further reduce the journey time between Birmingham and London and put Birmingham within easy reach of the main cities to the North and West. These developments will add to the attractions of the Region as a centre and should meet future passenger demands. It is difficult to say what effect entry into Europe would have on freight transport methods. A Channel tunnel could result in an increased concentration of road transport in the South East but in the interim it should give the opportunity to British Rail to encourage the use of rail containers.

Journeys to work

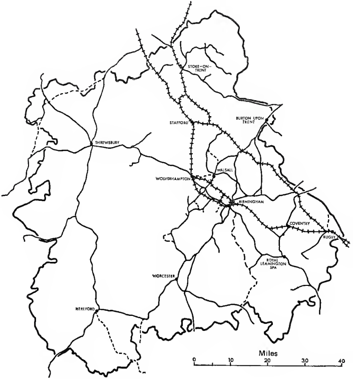
7.22 The economic importance of commuting in the conurbation is beyond doubt and its impact on other parts of the Region is shown in Fig 21. Its growth is the result of a variety of changes that have taken place in our pattern of living. People have proved more mobile than jobs; car ownership has increased; attractive building sites have been readily available on the outskirts of the main population centres, while land has been short within these centres; there is a willingness as living standards rise to spend more on the journey to work. These points raise questions of land use and housing policy as much as they do the provision of transport facilities.

7.23 Commuting involves all forms of transport but commuters from outside the conurbation and similar urban centres rely more on private cars than any other type of transport. Within the conurbation however buses provide the main means of transport and 60% of the movement to Birmingham city centre is by bus. Rail services are still important as a means of getting to work, but the resulting travel peaks raise economic problems for the railways with their high level of fixed costs.

7.24 It is clearly in industry's interest that people should not be unnecessarily restricted in their choice of workplace by the cost of wear and tear of travelling. Where they use their own cars it becomes one of the factors to be taken into account in deciding road investment priorities. Where it is a question of the form and level of service that should be provided by public transport, it is important that a comprehensive view should be taken of both road and rail services in order to meet commuting demands as economically as possible. The administrative machinery to do this has been set up with the formation of the West Midlands Transport Authority in 1969. It is too early to comment on its operations, but it is in a position to make an overall judgement on the provision of services and examine the merits of subsidising certain services for social reasons on a properly costed basis.

7.25 The high fixed costs of rail services have already been referred to. At present in this region 27 rail passenger services, mainly rural and commuter, are receiving grants, some of which are substantial. The logic of requiring the subsidies to be paid by those who benefit from the service is unquestionable, but its consequence is likely to be further rail closures which may make economic sense in the short-run, but prove expensive in the longer term. Increased pressure on the roads and the development of rapid transit commuter rail services could swing the balance of costs back in favour of rail in the next ten years, but this would be too late if lines had already been closed as the cost of bringing them back into service would be prohibitive. We are not in a position to make a judgement on this point, but it does emphasise the need for a clear overall communications plan for the Region which looks far enough ahead to take into account long-term as well as short-term costs.

West Midlands
RAILWAYS



ELECTRIFIED LINES AT DEC. 1969 —+++++—

EXISTING PASSENGER AND/OR FREIGHT LINES (other than electrified) AT DEC. 1969 ———

LINES UNDER CONSIDERATION FOR CLOSURE AT DEC. 1969 - - - - - -

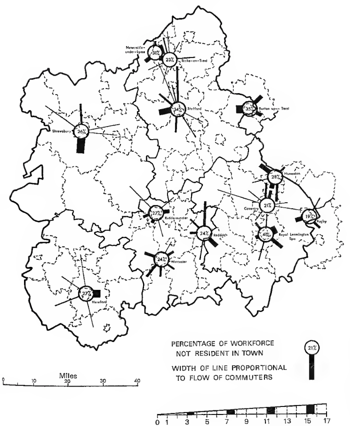
LINES CLOSED SINCE JAN. 1965 --------

See paragraph 7.20

Source D O E

West Midlands

COMMUTING TO WORK
Major flows to the principal towns
1966



See paragraph 7.22

Source D O E

7.26 Finally there are special difficulties in the rural parts of the Region and while this may be considered mainly a social problem it has its economic side. The case for encouraging some industrial developments in selected centres in the Western part of the Region is argued later,* but even this limited development will not provide opportunities for employment in the smaller towns and villages unless there is a form of public transport available to meet their needs. Steps that might be taken include the licensing of minibuses for public transport and combined mail and passenger bus services, although the main hope for the continuance of bus services in rural areas probably rests in the use by local authorities of subsidies under Section 34 of the Transport Act 1968.

Air services

TABLE 27 International and domestic passenger traffic 1969

Airport	Total terminal† Passengers	Total International	Total Domestic
Heathrow	14,085,029	11,294,969	2,790,060
Gatwick	2,993,969	2,610,279	383,690
Glasgow	1,610,774	279,016	1,331,758
Manchester	1,549,105	887,780	661,325
Luton	1,487,685	1,458,950	28,735
Belfast	1,026,776	42,023	984,753
Birmingham	615,315	320,438	294,877
Edinburgh	602,066	50,733	551,333
Southend	401,122	383,553	17,569
Liverpool	379,012	112,733	266,279
Isle of Man	359,377	10,784	348,593
Prestwick	312,067	274,965	37,092
All 43 reporting airports	28,063,999	18,688,661	9,375,338

†Passengers joining or leaving a flight at the aerodrome in question

Source: D.T.I.

7.27 There are five licensed aerodromes in the West Midlands but Birmingham Airport is now accepted as the main regional airport and is the only one to which scheduled services operate. In terms of passengers Birmingham Airport ranks seventh among U.K. airports.

7.28 Considering the size of the conurbation and its economic importance Birmingham Airport might have been expected to appear higher on the list. Its ranking reflects its situation midway between Manchester and London and its position at the hub of the road and rail network offering easy access to other airports. Its growth rate compares favourably with Manchester and Glasgow as is shown by Table 28.

TABLE 28 U.K. terminal passenger avarage annual growth rates

	Percentage increases	
	1963–68	1958–68
All U.K. reporting airports	9·9	13·9
London Area airports combined	11·0	14·5
Heathrow	10·4	14·1
Gatwick	16·3	27·2
U.K. airports combined except London Area	8·2	12·9
Birmingham	9·5	13·8
Glasgow	6·9	12·5
Manchester	5·5	12·6

Source: D.T.I.

7.29 Numbers of passengers measure the use that is made of an airport, but do not fully reflect its value to the region. According to a survey made in 1968 78% of the passengers using Birmingham Airport travelled by scheduled air services, 30% were on direct flights to or from the continent and 10% were on London services, three-quarters of whom were changing on to other services at Heathrow. Inasmuch as travel by scheduled services represents business rather than holiday travel, Birmingham Airport is important to the commercial life of the Region. While freight services are not large they too have grown, from 2,300 tons in 1965 to 4,400 tons in 1969. There is considerable potential for air freight in the Region, particularly for high-value exports like machine tools, as the schedules and costs become increasingly competitive.

7.30 The limitations to the development of Birmingham Airport are its geographical position in relation to other established airports and the length of its runways. It may also be affected by the siting of the Third London Airport if one of the inland sites is finally chosen.

7.31 From the point of view of industry there would be definite advantages in having a wider range of services available from Birmingham Airport and this could well be tied in with the development of the National Exhibition Centre. The Centre will have first-class motorway and rail connections to London and the North and will be linked to the airport.‡ Birmingham Airport could therefore become the natural point of entry for business visitors wishing to use the Centre and make commercial contacts in Britain. This in turn would suggest a network of air services between the airport and the main European industrial towns.

7.32 Looked at nationally such a development would have two advantages. In the first place it would divert some incoming traffic away from Heathrow and in the context of entry into Europe this is a section of traffic that is likely to grow rapidly and add to Heathrow's problems in the short and medium term, whatever the decision about the Third London Airport. Secondly the passengers who at present travel from Birmingham to Heathrow to connect with services to Europe could cut out the Heathrow stage and so reduce both inward and outward Heathrow flights, conferring a double benefit.

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* See paragraph 8.37

‡ See frontispiece for schematic plan.

7.33 In addition to the advantages to industry of more direct contracts with Europe, there is also the fact that Birmingham Airport is under-used. Its runway capacity is probably only used to the extent of 30% to 40%, although a growth in passenger traffic would mean further investment in other airport facilities.

7.34 Apart from Birmingham Airport, the remaining four aerodromes in the Region also have a contribution to make in relation to tours and air freight and in connection with private flying, which undoubtedly grow as the links with Europe become closer. Baginton (Coventry) could also act as a standby for Birmingham, if the traffic load were to grow to the extent that this was needed.

7.35 There is a general point which can be made of both air and rail passenger services and that is the need for a marketing outlook on the part of the provider of the service. It is only too easy for a situation to arise in which the figures for a particular service are low and so the service is withdrawn. In turn this withdrawal reduces the general level of service from the airport or station in question and so leads to a further reduction in passengers. What is required is an approach which is guided by the potential traffic available and looks at ways of attracting as large a share as possible of that traffic. An aggressive marketing approach would take into account such points as service times, choice of equipment, fare structures and car parking facilities and try and make the most of the Region's existing investment in communications.

Fuel and power

7.36 Fuel and power are only dealt with briefly because there seems no prospect of the industrial growth of the Region being held up by a shortage of power. In addition, as part of the national change to a four fuel economy, competition between the different fuel sources should serve to keep prices in line with those of other regions. The energy industry is however also important as an employer and the following paragraphs summarise the position in the coal, gas, electricity and oil industries.

7.37 Taking coal first, in 1969 there were nineteen collieries in the Region employing 27,800 people, which represented a substantial drop in employment of 46% in eight years. Although the run-down in man-power has been carefully planned there are still unemployed ex-miners in Bridgnorth, Oswestry and North Warwickshire. The reduction in employment in the next five years will be substantially less than it has been and the future of the industry in the West Midlands will depend on improvements in efficiency and concentration on the larger collieries where mechanisation is worthwhile. There is a problem in finding alternative employment where a mine that faces closure is geographically isolated like Highley (Bridgnorth) and the needs of miners in North Warwickshire, North Staffordshire and Stoke should be taken into account in the application of i.d.c. policy.

7.38 The main change in the pattern of fuel use has come from the discovery of North Sea Gas and the increasing share of the energy market that has gone to gas. The West Midlands Gas Board has offered industrial users conversion to natural gas in advance of the main conversion programme and it takes more natural gas than any other area Board. Natural gas in 1969/70 represented 62% of its supply and is expected to exceed 70% in 1970/71. It also produced the largest revenue surplus in 1968/69 among area Boards, although the average price per therm to the consumer has fallen in real terms over the last ten years. Numbers employed in the industry have fallen from more than 12,000 in 1961 to just over 10,000 in 1969. In time the 12 coal-carbonising plants and oil-reforming units in the Region will be taken out of commission and although extra space will be required for the storage of natural gas, this should enable some land to be released for redevelopment.

7.39 Electricity is expected to show a 40% growth over the next six to seven years and *Patterns of Growth** drew attention to the difficulties of finding sites for new power stations. In 1966 the C.E.G.B. announced that they were investigating four areas in South East Staffordshire as possible power station sites. It is not known what conclusions were drawn from these investigations. The C.E.G.B.'s application for planning permission and a licence to build a 1300 MW nuclear power station at Stourport on Severn was recently turned down.

7.40 There are no oil refineries in the West Midlands but 5·3 million tons of oil products were used in the Region in 1969 excluding power stations, gas works and non-energy users. The industry's activities are therefore the distribution and marketing of oil products in which the Region shows an above average growth rate particularly in motor fuel. About one-third of the supplies come by pipeline to the terminals at Kingsbury and Uttoxeter.

7.41 The overall picture on fuel and power is therefore one of availability of supplies with shifts in the share of the energy market going to the different fuels in response to competition. Employment is still likely to fall taking the industry as a whole, because of the predominance of coal in employment terms. The progress of natural gas may release land for other uses and the building of new power stations will also provide additional employment.

Education and training

7.42 The educational system of the Region is of direct relevance to its economic future. The fundamental resource of the Region is the people that live in it and the degree to which they are able to make the most of their abilities depends on the educational opportunities open to them and the use they make of them. We pointed out in the introduction to this chapter that the educational facilities in the West Midlands served more than the Region, but in primary, secondary and much of further education one can consider education in regional terms.

7.43 How far are the educational facilities of the Region able to meet the present and future demands that will be made on them? At primary and secondary school level new schools are keeping pace with the growth of the population, but there has been little money available for the replacement of old schools or for the reorganisation of secondary education. However, only 5% of the Region's maintained school population is housed in pre-1903 schools for which there is a long-term need but which need major improvement or replacement. This compares with a figure of about 11% for England and Wales as a whole. The Region has a higher than national proportion of disadvantaged families, possible because of immigration, to judge by the fact that in the first two phases of the Urban Aid Programme the West Midlands received 17·8% and 19·8% respectively of the national allocation of funds.

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* *Patterns of Growth* see footnote to paragraph 8.6.

7.44 Further up the age-scale sixth-form colleges are planned for Stoke-on-Trent and Hereford and if these are closely linked to Colleges of Further Education they could be an important step forward in bridging the transition from school to industry. There has been a rapid expansion of facilities for further education and in 1969 there were 327,000 students receiving further education in the Region, 19,000 full-time, 4,000 sandwich, 190,000 part-time day and evening and 114,000 in Evening Institutes. The growth in the number of full-time and sandwich course students is particularly significant. In addition there are 18 Colleges of Education in the Region with a total student roll of 12,400. The main influences on the development of further education are the establishment of the polytechnics and of the Industrial Training Boards. Four polytechnics have recently been designated for the West Midlands at Wolverhampton, Stoke/Stafford, Coventry/Rugby and Birmingham, which are well-placed to meet regional needs. The Industrial Training Boards are responsible for encouraging the sort of training that their sponsoring industries require and they should have a strong link with the educational system through the Regional Advisory Council for Further Education. At the University level the identity is naturally less close between the provision of the facilities in the Region and its use by the population of the Region; this is not to say that they do not play a critical role in the future, an issue that will be developed later in the chapter. The four universities in the Region had 13,000 students in 1969, representing about 6% of the university population in the U.K.

7.45 The provision of these facilities still leaves open the question of whether they are used to the degree that they could be and how far their efforts are directed towards meeting not just present demands but the Region's future needs. On the first point, in 1968/69 the West Midlands proportion of school leavers (boys) going into full-time further education was 16·5% compared to 20·9% in the South East and 19·0% in the whole country. The Region's relative position has improved in the last five years, but is still below the national average in its support for full-time courses. This reluctance to make full use of the available facilities may well be due to the competition offered by industry in terms of jobs and wages on leaving school. Both industry and the schools have a joint interest in making the advantages of further education a reality to school leavers.

7.46 The reason for stressing the role of further education is that while it is important now, if many are to gain long term satisfaction from their work, it will be an essential requirement for most jobs in the industrial and commercial world of the future. The main challenge to the present structure of industry comes from the pace of technological change: this is already fast and accelerating rapidly; as can readily be seen by considering the rate at which the speeds of travel and calculation have advanced in the last ten years. In educational terms the advance of technology requires first sufficient people with the necessary mathematical and scientific skills to keep industry in the Region up with this advance. Secondly it requires that everyone coming into industry from now on, most of whom will still be working well into the 21st century, should have a sufficiently good basic education to be able to absorb the training and retraining they are going to need as they face two or three complete changes of job in their working lives.

7.47 Both these requirements raise issues of national as well as regional policy. Regionally there are a number of specific points which should be followed up in the West Midlands and which would contribute to our ability to harness technological change rather than see it as a threat. First, there should be much more discussion with the school about the future pattern of life in the Region. Only if both teachers and children are aware of the likely changes in the years ahead, can they be expected to appreciate the need to equip themselves to adapt to, and even to welcome those changes. Attention tends to be concentrated in the short-term, on the training that is needed and on the jobs that are available now. It requires a conscious effort on the part of industry to forecast the probable development in the future and a readiness by those in education to translate these developments not just in terms of vocational training but in terms of helping their pupils to exercise rational choice over their careers.

7.48 In this context the consultative document on the future of the employment service is relevant. It does not make a definite recommendation about the future of the Youth Employment Service, but the concept of the employment service that it presents meets many of the aims that we believe such a service should have. The awareness of the need to look ahead at the changing pattern of employment, to keep up with the implications of technological change and to provide effective retraining on a sufficient scale are all critical to the success of these proposals. The separation of the administration of unemployment benefit from employment work and the recruitment of specially trained staff mark the change in approach from that of a placement agency to a service which would combine the effective use and planning of manpower.

7.49 A fundamental concern about the present pattern of education is its effectiveness in conveying the implications of the fast changing industrial world. The profession of education is all too often a closed cycle of school to training college or university and back to school again with change being limited to improved facilities and teaching methods, but neither at a revolutionary rate. Those they teach on the other hand will have to live with major discontinuities such as the disappearance of complete classes of jobs and whole industries during their working lives. If it were possible for at least some of those who teach in the Region to have a period in industry as part of their training and for more people in industry to give time to discussing with teachers the problems of the future it would do something to bridge this gap.

7.50 Meanwhile the initiative must lie with industry to see that the further education system is aware of its needs and priorities through the IT8's, the Regional Advisory Council and the governing bodies of individual institutions and to see that the system responds rapidly and efficiently. There are three different groups of people to be considered here. The first consists of the students who have just left school and have the opportunity of acquiring qualifications, which will fit them to meet the challenge of the more complex and professional world that lies ahead. The second group is made up of people who are already managers, but whose contribution can be made more affective by short courses in specific techniques and by being kept in touch with development in management thinking. The third group are those whose skills can no longer be used through the disappearance of their employment (e.g. miners) and who are being retrained in the Department of Employment's Government Training Centres. Only if the needs of these groups are effectively met will the Region make the most of its main resource. Industry must ensure that those who provide education and training are alive to these vital considerations.

7.51 Finally there are the more specialised educational institutions such as the School of Architecture which is attached to Aston University and the Medical School at Birmingham University. They are of great importance to the West Midlands because if the facilities for training as a doctor or as an architect exist in the Region, this will attract local people to these professions. In addition some of those who come to the Region to study will see at first hand what it has to offer and settle here after they have qualified. Further, the teaching and research that goes on in these establishments rubs off through contacts with professional bodies, through lectures and the interchange of views and acts as a stimulus to thinking and action in the Region. The advantages of siting specialised educational institutions centrally should be carefully considered, because of the stimulus they can provide in the right location.

7.52 The development at Birmingham of specialised equipment for the treatment of heart disease is an interesting example of the interaction between medical and technical skills as is the specialist work that is being carried out on burns. It suggests that one of the Region's natural growth areas for the future may be in the field of medical equipment and artificial spare part surgery. This development could be supported by the introduction of medical/engineering courses at the appropriate universities.

Technological assistance

7.53 Table 29 shows the range of government-supported centres concerned with increasing the contribution that technology can make to the economy and the way in which they are divided between the Region and the rest of England and Wales.

7.54 Two points to which attention should be drawn are that only four Research Associations are based here in the industrial centre of the country compared with 21 in the South East/East Anglia and there are no Industrial Units attached to the Region's universities. This is relevant to the proposals in the next chapter.

Small manufacturing firms

7.55 The small business has traditionally been the backbone of industry in the Region and the rate at which establishments employing between 11 and 24 people have disappeared has been markedly less in the West Midlands than in the country as a whole. If small firms are defined as those that employ fewer than 250 people, then they employ in total well over 300,000 in the Region and are therefore of considerable economic importance to its future. The majority are in metalwork or light engineering and of these perhaps 40% make components or equipment for the vehicle industry. They do this subcontracting work more cheaply than the motor manufacturers could do it for themselves and can quickly adapt to changes in the pattern of demand. Their competitive power is based largely on their ability to keep their overhead costs below those of their customers.

7.56 The threats to the continued existence of the present number of small firms include many that are of national character, such as their tax position and close company legislation. These will no doubt be considered by the Bolton Committee. Others that relate more to their regional position are:

- **a** their traditional markets are disappearing through technological change, mergers, the rationalising of buying policies of larger firms and increased foreign competition;
- **b** many of them have difficulty in keeping pace with change in respect of their plant, products and management;
- **c** their competitive position based on inexpensive premises, local labour and not paying inflated wages is being undermined by redevelopment in the city causing them and their workpeople to move, by i.d.c. control and by the increased expectations of their work force;

TABLE 29 Government supported centres

		W.M. Region	*National*
1	D.T.I. Regional Offices—number	1	9
2	Industrial Liaison Centres—number	6	75
3a	Research establishments *Note* a number of these are now under control of either Ministry of Aviation Supply or Ministry of Defence but their efforts are still available at the present time	1	16
3b	UKAEA R and D establishments	0	7
4	Research associations	4	43
5a	Low cost automation centres	1	13
5b	University industrial units	0	5
6	Universities	4	37
7	Polytechnics	4	28
8	Small business centres	1*	3

* This Small Business Centre in Aston University became self-supporting on 1 April 1971.

Source: D.T.I.

d they often depend on the traditional craft skills of the men who founded them;

e they suffer from various financial constraints such as difficulties in obtaining credit for themselves and in refusing too much of it to their large customers.

7.57 In the face of these pressures the importance of the small manufacturing firm as an employer is likely to continue to decline in the next 10–20 years. There are however ways in which the decline could be slowed down to the advantage of small firms and the Region.

7.58 The first need is to ensure that within the Region we have the right advisory services to help small manufacturers increase the efficiency of their existing operations, develop new products and acquire new markets. Here the Region is well placed in that it has the first Small Business Centre in the country, which is specifically geared to assisting such firms. The S.B.C. is part of the Department of Industrial Administration at the University of Aston and with the help of the University's two Industrial Liaison Officers is there to meet the needs of small firms. This is not only a question of providing the right type and level of consultancy services and advice, but of doing so in such a way that the man running the business, who cannot leave it to attend the usual run of management courses, can make effective use of it. There is also a low-cost automation centre at Birmingham University which can draw on valuable practical experience in making it possible for small firms to improve productivity at levels of investment they can afford.

7.59 A second line of action is to encourage the development of the small service company. There is no doubt that growing opportunities exist in the field of services and that the structure of the service industries is in many ways more suited to small firms than that of manufacturing. Instead of making components for other companies such businesses would be providing a repair and maintenance service for them or taking over their cleaning, catering or any of the wide range of work associated with data processing. This kind of change in direction will only come about as a result of much more discussion in schools about the changing pattern of employment, as was suggested in paragraphs 7.47 to 7.49.

7.60 The third suggestion is that the technically advanced small business should be specifically encouraged in this Region. There is not much evidence, of this type of form in the West Midlands at present. One recent survey puts about 5% of existing small businesses in this category, which is hardly surprising since industrial policy for the Region does not set out to encourage such enterprises. The survey referred to found that the only small electronic company that they came across that was in high value circuit components as opposed to simple pressings had been refused an i.d.c. for expansion. If the climate is changed there is a real possibility that the small firm could once again make its original contribution to the growth of the Region. In his own firm the single-minded innovator or entrepreneur, who would be stifled in a larger organisation, has the scope and incentive to develop his own ideas.

Environment

7.61 The developments of the 19th century have left a legacy of poor environment in most of the towns that grew rapidly during the period of West Midlands industrial expansion. This is particularly true of the conurbation and the Potteries. It has resulted in dilapidated houses and out-of-date industrial premises, made worse by the tendency for the different elements that contribute to a poor environment to be found together. Areas therefore that are unattractive because of rundown houses and factories often suffer from congestion, pollution and noise as well. There is no simple remedy for environmental problems and it will take time, money and imagination to improve the drearier urban areas.

7.62 The amount of really derelict land in the Region is estimated at 13,000 acres, just over 3,000 acres of which is within the conurbation and will be particularly difficult to reclaim. Derelict land covers old mine workings, spoil heaps and land damaged by subsidence, in fact any area that has been developed and then abandoned leaving it unfit for other uses and unsightly. Stoke-on-Trent has more derelict land than any other county borough in England and is vigorously tackling this problem as part of a drive to improve the amenities of the Potteries. Following upon the report of the Hunt Committee certain areas were designated by the Government for special allowances for the reclamation of derelict land. North Staffordshire is such an area.

7.63 The reclamation of derelict land can help meet industrial and housing needs in crowded areas and the bulk of the 7,000 acres reclaimed in the Black Country between 1945 and 1968 was used in this way. It may also be reclaimed as open space and so provide a double benefit by removing an eyesore and adding to recreational facilities. Industry has an interest in the continued progress of reclamation, because much of the derelict land is by its nature in industrial areas where land is scarce and because reclamation improves environment.

7.64 It is impossible to value the amenities of the Region but they are important in economic terms since they affect the location decisions of firms. In the Government departmental study on location to which we have already referred 'Good amenities and environment' was given as a major factor in their choice by 28% of firms and as a minor factor by 40%, so that two-thirds of all firms specifically took the environment into account when deciding where to put up a factory. It also influences the decisions of individuals as to whether they want to live and work in the Region. Amenities in this sense go well beyond being able to drive easily into unspoilt countryside and living in pleasant surroundings. They include the standard of schools, medical services, shops and leisure activities that are available locally. Most of these are discussed in other sections of the appraisal, but recreation we deal with here.

7.65 The Region has a wide range of recreational facilities and is dealing with the question of priorities in recreation as methodically as any region in the country. The C.C.P.R. and the Regional Sports Council have listed the facilities that exist in the West Midlands and have established where the demand is likely to be in the future. They have also devised ways of making more intensive use of the facilities that the Region already has, such as swimming baths, playing fields and sports halls. They have organised schemes for the more general use of facilities belonging to schools and firms. The record of progress in this field and the plans for the future are well summarised in *Regional Recreation* published in 1966 and brought up to date in *Regional Recreation 1970*.

7.66 While industry would support the efforts being made to improve the amenities of the Region, they will be expensive and will not produce results in the short-term and so cannot come high on our priorities for expenditure. What could be done however with little expense and a quicker return would be to make the present amenities of the Region more widely known. We were told on several occasions that although managers or members of the professions might be reluctant to come to the Region from the South East, once here they had no wish to move; one of the professions specifically referred to the 'undeserved public image of the Region'. The amenities of the West Midlands are considerable and are continually being improved. We in the Region should do all that we can to see that the West Midlands has the better public image it deserves.

CHAPTER 8 PLANNING FOR GROWTH

8.1 The Working Party's aim in this chapter is to be more precise about the economic planning objectives for the Region and how these objectives can best be achieved. In Chapter 2 the arguments for a more positive regional policy were put forward. We now develop these arguments in practical terms. In doing this we appreciate that economic policy has to be weighed against other aspects of regional policy and that national and regional economic interests are closely linked. We have put our view of planning objectives as clearly as we can and not attempted to produce a balanced strategy that gave weight to all the other relevant factors. The vital task of drawing up the complete strategy for the Region, including the economic element, is in the hands of the West Midlands Planning Authorities Conference's study team.

8.2 The chapter has four sections. The first is concerned with regional development and the physical side of economic planning. What pattern of housing and industry should be encouraged to develop in the Region and what changes would have to be made in present location policies to achieve a faster rate of economic growth? The second and third sections deal specifically with how the growth of service industries and new types of manufacturing industry could be stimulated, within the proposed policy guidelines. The final section discusses some aspects of the relationship between government and the Region, a wide subject but fundamental to translating desirable policies into practical action.

Regional development

8.3 The starting point for any regional development plan is the present pattern of industry and housing in the West Midlands. This pattern can only change slowly and the first aim must be to make the most of what we have. This applies whether we are considering houses, roads or factories; complete redevelopment is justified if the improvement of existing assets is going to be an inadequate and therefore expensive solution in the long run.

8.4 The present pattern of physical development has been largely dictated by economic decisions taken in the past but this does not mean that the pattern is still appropriate. Economic costs are not the only costs or necessarily the most important. What is economic for the individual may not be economic for the community and the present pattern is largely the sum of individual economic decisions. The economic considerations of the last two centuries are not the same as those obtaining today and in the future. The greater the departure from the present pattern, the greater the cost is likely to be and the more it brings into question whether it is what people want. This emphasises the need to establish the economic facts of any planning proposals before making judgements on broader grounds and to sound the opinions of those who will be affected by such proposals.

8.5 The population of the West Midlands is expected to go up from 5,144,700 in 1969 to 5,516,000 in 1981 and 7% more people in the Region by 1981 means a more than proportionate increase in the new houses that will by then be required. The number of separate households is rising faster than the growth in population and so this trend has to be added on to the growth in population. Then there is the need for many existing houses to be replaced if the average age of the housing stock is not to rise and the problem of substandard housing to get worse. A survey in December 1967 showed that in Birmingham alone 14% (some 44,000 houses) of the total housing stock was unfit while for the conurbation as a whole the proportion was 10% (79,000 houses). These figures give some idea of the size of the replacement programme required, without taking into account the fact that housing standards will rise.

8.6 The growth in population and the need to build large numbers of houses offers various planning options. In the shorter term the broad alternatives are either to build on the outskirts of the main centres of population or to channel growth away from them to new towns or extensions to other towns in the Region at a distance from these centres. In the longer term the alternatives posed by *Patterns of Growth** were 'corridor growth' or free standing towns. 'Corridor growth' means development, not necessarily continuous, along lines of communication leaving the area at the back of the development open for agriculture and recreation. Freestanding towns would on the other hand be surrounded by country and separated by it from other centres of population. Whether we are considering corridor growth as opposed to free-standing towns or peripheral growth against new towns, the impression should not be given that the alternative planning approaches are mutually exclusive. The eventual pattern of development in each case will contain elements of both approaches and the critical question is what the balance between them should be.

8.7 Dealing first with the longer term alternatives, the 'corridor growth' approach would appear to have economic advantages over building new freestanding towns. Development has always followed the opening up of roads and railways, because good communications are an important aspect of industrial location. Encouraging growth along the main routes through the Region is therefore going with the industrial tide. It is also building on one of the strengths of the Region, its communications network. A great deal depends on where the biggest expansion is going to occur in adjoining regions. There is bound to be considerable growth in the South and South East which will be further stimulated if we join the E.E.C. There are major development plans for Deeside, Humberside, and Severnside and the last in particular seems set to be an important growth area. The 'corridor growth' approach could adapt to whatever pattern of expansion around the Region finally took place and so it has the merit of being flexible. These longer term considerations raise the question whether enough co-ordination of economic planning is taking place between the regions and what developments are envisaged along the line of the Region's most heavily used route, that to the South East.

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* *The West Midlands: Patterns of Growth*, a first report by the West Midlands Economic Planning Council, H.M.S.O., 1967, 40p net.

8.8 Taking a shorter time horizon the options are between allowing growth in and around the main centres of population and diverting it to new and expanded towns. Since the conurbation contains nearly half the Region's population and it was the shortage of housing in the conurbation that led to the plans for growth elsewhere, it is simplest to consider the alternatives in terms of growth of the conurbation as against growth in new towns.

8.9 The argument for allowing the conurbation to grow at the edges is that this is the way in which housing needs would be met if there were no controls and so it may correspond most closely to what people want and provide the necessary housing at the lowest overall costs. At any point in time building on the periphery of the conurbation is probably the cheapest solution, as the services have largely been provided and it requires virtually no movement of industry. This is in practice development that is taking place.

8.10 The difficulty is that taking a short time span ignores the long run costs of this kind of development, which can be considerable. The flow of goods and people in and out of the conurbation would be increased, which would require an even greater rate of investment in communications than is being made at present. The effect on agricultural land and on the amenities of those already living in the conurbation must also be taken into account. 'Patterns of Growth' after weighing the various arguments expressed its views as follows:

> 'It is socially and economically most desirable to contain the conurbation within approximately its present physical limits . . . Containment would reduce the social and economic threat of ever growing congestion while there is value in keeping the built-up area as small as possible to allow people to get into the country reasonably conveniently' (paragraph 96).

The issue now is not whether this is sound policy, but how far it is still open as an option.

8.11 The alternative is to build new towns and expand others as a counter-attraction to the conurbation. This avoids the consequences of letting the conurbation grow, underlined in *Patterns of Growth*, but it depends on the assumption that there will be jobs in the localities concerned. To the extent that local employment opportunities are insufficient, commuting to the conurbation will continue, congestion costs will be much as they would have been if building had occurred on the perimeter and in addition travel to work costs will have risen. The only advantages are that access to the countryside for those living in the conurbation and the agricultural and amenity value of the land round the conurbation will both be unaffected.

8.12 *Patterns of Growth* proposed that the expected increase of 554,000 in the Region's population between 1963 and 1981 should be housed as to 150,000 around the proposed Green Belt and the remainder in the new and expanded towns. The balance was to be therefore nearly three to one in favour of development away from the conurbation. The report emphasised at the time that to achieve this balance industry would have to move out of the conurbation at five times the rate it was then moving.

8.13 Since *Patterns of Growth* the balance has been revised so as to expect less from the new towns. Even to meet this lower target industry would still need to be providing jobs in the new areas at a considerably higher rate than it has yet achieved. The rate of movement of industry increased in the early 1960's only to decrease again after 1967/8 and 1981 is drawing nearer. It is true to say that the revised population figures suggest that fewer jobs need to be created in the new towns than was thought at the time of *Patterns of Growth*. There is however no prospects of jobs being created fast enough in the new areas to meet the revised target. It is not just a question of a given number of job opportunities, the opening must match the employment needs of those who are moving into the new towns and equally it is their skills which will determine what type of industry is attracted. This is a point that must be taken into account in deciding on the levels of rents, patterns of communications and proportions of private to local authority housing that are thought appropriate for the new towns.

8.14 It would be more realistic on present trends to expect at the most an equal contribution towards housing the growth in population from the new and expanded towns on the one hand and the conurbation on the other, rather than the proportion of three to one that was envisaged in *Patterns of Growth*. We are not in a position to judge whether this a sensible balance in economic terms, but what is clear is that the housing programme will be governed not only by theoretical considerations of locational advantages, but by the speed at which jobs are created in the new areas. In the early stages of development such jobs almost entirely depend on the influx of industry, later on they should generate their own employment.

8.15 In practice very little is known about the ability of industry to move and what the economic effects of movement are in the longer run. *Patterns of Growth* suggested various research projects which would increase our knowledge of the factors affecting the movement of firms and we would still recommend that they should be carried out. There is however evidence from the experience of the D.T.I. in dealing with i.d.c. applications and from at least some of the enquiries carried out by the C.U.R.S.* that there is less what is loosely called 'mobile' industry in the West Midlands than had been thought. This may well be because of the structure of the Region's industry and the close links between conurbation firms.

8.16 The main pressure for firms to move comes when they outgrow their existing premises. The best way therefore to increase the movement of industry is to achieve a faster regional rate of growth. The problem this poses is how to reconcile a policy for growth with the present system of controls which depends in part on the negative power to refuse permission to firms to expand on their existing sites. This raises the whole question of the industrial development certificate policy which is central to any discussion about the future pattern of housing, employment and industry in the West Midlands.

8.17 The argument for some form of control over industrial location has been that without it the level of economic activity in the assisted areas would fall further behind that of the Midlands and the South. The consequences of the gap becoming wider, it is contended, would be a drift of population to the South leaving under-used resources such as schools, hospitals and roads in the North and putting an added burden on the same resources in the Midlands and South. This would be neither in the national interest nor in the interests of the receiving areas.

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* The Centre for Urban and Regional Studies of Birmingham University.

8.18 The West Midlands Economic Planning Council has accepted this reasoning and a large number of jobs have been created in the assisted areas by the West Midlands in the last fifteen to twenty years. The methods used to bring about the movement of firms have been a combination of the carrot and the stick, financial advantages for firms moving to the assisted areas and the power to refuse to allow expansion in the West Midlands. Over the last two years the W.M.E.P.C. has increasingly questioned the present policy which leaves several issues unresolved: what are the long term consequences of the policy on the structure of U.K. industry; what are its costs compared with other means of achieving the same ends such as greater investment in resources in the assisted areas and particularly in training skilled labour? We cannot make judgements on these issues, although the present economic conditions will test the permanency of some of the moves that have been made out of the Region. In a period of financial stringency there will be economic pressures to concentrate production, to make more intensive use of assets and to dispose of plant and buildings that can be made surplus. This is bound to lead to a policy of greater centralisation especially in large organisations. Branch factories in the assisted areas may well be the first casualties of such a policy. The main point is that to accept the desirability of encouraging some movement of industry to the assisted areas and to parts of the Region like the new towns which are given priority is not the same as to agree that the present methods of bringing about this movement are the best or only ones.

8.19 The provision of incentives to move to the assisted areas raises no particular difficulties, as it merely weights economic conditions in favour of those areas. It is in principle no different from any other advantage that the assisted areas may have to offer such as a better supply of labour, lower wage costs, less congestion and cheaper housing. The choice is still left to the firm and it makes its move in whole or in part on the basis of which course yields the best return. The decision is limited to one of location.

8.20 Refusing to allow a firm to expand on its present site as a means of causing a firm to move gives rise to a quite different calculation with different economic consequences: the decision now for the firm is between remaining where it is and limiting its growth or accepting that to grow it has to move wholly or partially. The decision if an i.d.c. is refused is between growth or at best limited growth; it has switched from a location decision which can largely be based on ascertainable costs, to a fundamental decision about the future of the firm and the contribution it is going to make to the economy. The problem this poses for those with the difficult task of enforcing the control system is to know what the effect of an i.d.c. refusal will be, will it force a firm to move or set up a branch elsewhere or will it in all senses of the word stay put? The judgement whether or not to grant an i.d.c. has to be made in imperfect evidence, because there must always be doubt whether a firm can operate successfully on a new site; on top of this the decision must be taken with no certainty as to its economic consequences.

8.21 There would therefore be economic advantages in concentrating on methods of achieving the required movement of firms by financial incentives, including say a graded labour tax, or any other positive means of attracting firms such as by greater investment in the assisted areas. This would leave the decisions to be taken on economic grounds by the firms themselves, who have to carry the financial consequences of those decisions. Even if the i.d.c. system were modified, firms would still be subject to the existing local authority planning controls.

8.22 It is important to distinguish between the two objectives of the i.d.c. policy in relation to the Region: the encouragement of firms to move to the assisted areas and the encouragement of them to move to the new towns that are taking the overspill from the conurbation. The economic effects of the latter differ from the former, as movement to the new towns keeps the firms concerned within the West Midlands and is a means of helping the Region to achieve the balance of industry and housing for which it is planning.

8.23 The difficulty which many conurbation firms face over a move to the new towns is the reluctance of the people in the business on whom they depend to move with them. This adds emphasis to the point made in paragraph 8.13 about the importance for the new towns of attracting as inhabitants the people who are key from an industrial point of view: this must be taken into account in the planning of the towns themselves. There is also the fact that if a move can be made at all then the assisted areas can offer financial incentives, which the overspill areas cannot. This is one of the reasons why the rate of movement of industry to the new towns is insufficient to support their planned rate of growth. When the W.M.E.P.C. gave its evidence to the Hunt Committee the rate of movement of manufacturing industry was less than one quarter of that which was required to meet the needs of the development programme for the overspill areas. Yet by 1981 something like £400 million will have been invested in Telford and Redditch alone. There will therefore be underused resources on a large scale if the expansion of the Region's new towns lags behind the investment that is being made in them. The recommendation of the W.M.E.P.C. to the Hunt Committee* was that some financial incentives should be used to encourage the movement of firms to the new towns and we continue to support this recommendation.

8.24 Whatever alternatives may be put forward there is an i.d.c. system in force and so we have considered as a Working Party how its operation could be altered to bring it into line with the objectives of a positive economic policy for the Region discussed in Chapter 2. The objections to the consequences of the present system of i.d.c. control can be summarised under three headings.

8.25 There is first its effect on growth to which reference has already been made. The system starts from the premise that growth in terms of employment for firms in the main industrial areas of the West Midlands is to be discouraged. Since it is difficult to disentangle the employment effects from the production effects of rebuilding—a better layout might allow capacity to be increased at a later date and so increase employment—the criterion becomes wider and means in practice that growth or modernisation is itself discouraged. In a survey made by the Birmingham Chamber of Commerce and Industry in 1968, 245 firms out of the 936 that replied reported that they had space available for expansion on their present site. 121 of these firms had considered expansion but decided not even to apply for an i.d.c., while a further 107 companies had got as far as informal talks with estate agents or government officials, as a result of which only 30 felt they had a case that was worth pursuing. Disregarding the 30, some of whom might eventually have established their case for expansion, these figures mean that just over 80% of the firms that had space available did not proceed with any form of growth that would have required an i.d.c. Even allowing for the self-selection implicit in answering the questionnaire, this result must be considered serious from the point of view of the Region. The argument that many of these firms might have been successful if they had pursued their cases more vigorously is irrelevant; in their view they would not have been granted an i.d.c. and it was on this view that they acted.

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* *The Intermediate Areas* A report by a Committee under the chairmanship of Sir Joseph Hunt Cmd 3998, H.M.S.O., £1.30 net (Paragraph 330(c)).

8.26 The consequences of the present system go beyond creating a climate which inhibits growth, they lead to the under-utilisation of resources and a decline in competitive ability. One of the effects of the controls is to sterilise unused industrial land. Firms keep any spare land since it could prove a valuable investment if conditions changed, but would fetch little if sold off without permission to develop it. Another effect of the controls is to discourage modernisation. It is often impossible to lay out production lines again or put in new machinery without rebuilding, because the premises were not designed for modern plant. It is also uneconomic to spend more than is strictly necessary on factory improvements, if at a later date the firm may have to move. Of great importance is the effect of the system in discouraging managers from taking on more work and making better use of their capacities. Many successful West Midlands firms are still run by the men who founded them and depend on their personal drive. The owner-manager cannot spread himself over more than one location and cannot carry the depth of management required to operate split sites or organise a major move. If applying for permission to extend an existing factory is laborious and could result in official pressure to move, it is rational for the owner-manager to prefer to stay where he is in terms of size and location.

8.27 Finally the way in which the present controls work has implications for the future industrial structure of the West Midlands that have not been thought through. It militates against the growth of new industries in the West Midlands, because an established firm in this sector would not be allowed to set up in the Region. It would be argued that if it could move to the West Midlands it could move further afield. Equally a small conurbation firm in a new industry would be discouraged from growing to any size in its existing location and although it might then have the choice of moving to an overspill area or to an assisted area, it could well be that the former would be no more economic than the latter because it would break its links with its customers and its sources of technical assistance. The linkage argument is precisely the one that can convincingly be put forward by firms operating in those traditional industries that have been established in the West Midlands longest and on whose fortunes the Region already heavily depends, so increasing the risks of future decline due to technological obsolescence.

8.28 It is easier to set down the objections to the method of operating the present policy than it is to frame new guidelines that will overcome them, but unless the problems raised by the i.d.c. system are appreciated the need for a new approach will not be recognised. It is also worth adding that the U.K. is the only country to use negative controls to any extent to influence industrial location and this must raise questions about its consequences for growth. Any location policy requires judgement by whoever has to administer it and cannot be reduced to a mechanical calculation of the costs and benefits involved. Our contribution is to suggest a new set of criteria against which to exercise that judgement.

8.29 These criteria would not be the only considerations to be taken into account, since the employment effects of a development would continue to be relevant in the context of helping the growth of the assisted areas. They would however establish new priorities and would concentrate on improving the regional growth rate. Their application would in practice result in a different policy towards the assisted areas. The balance between the movement of industry and the movement of people would be altered towards the latter. This alteration in emphasis is not an objective of the proposed policy, but would be the outcome of applying it and casts doubt on the economic effectiveness of the present industrial location policy. It has achieved movement of industry, but at the expense of increased costs and reduced growth in the regions with higher levels of economic activity, a loss that the economy cannot continue to afford.

8.30 A positive industrial location policy for the West Midlands would rely on four main criteria in deciding whether to allow a firm to expand on its existing site:

a the achievement of regional growth at least cost:
b the improvement of the efficiency and competitive ability of the Region:
c obtaining a better return from the Region's existing assets:
d bringing about a more balanced industrial structure in the Region.

8.31 The first criterion would be part of the essential task of establishing a new climate in the Region in favour of growth. The approach would be that it was the objective of D.T.I. to promote industrial growth and they would discuss with firms how their growth plans could be put into effect at the lowest cost to them and the community. Their attitude would be that of a consultant ready to help in any way they could and if the final decision entailed a move then the services of the Department would be used to find the best alternative location in cost terms. At present when firms have to move they tend to choose the nearest permitted site, which may not be the site at which their costs would be minimised. Firms should be given what advice they need to help them find the site which combines the lowest operating costs with planning acceptability.

8.32 The importance of the second criterion the improvement of efficiency and competitive ability needs no stressing. Given its present industrial structure the maintenance of the competitive position of the Region's existing industry is essential. Schemes for increasing efficiency by closing factories and concentrating operations should have a priority that they are not as yet receiving. It is only by actively encouraging rationalisation and modernisation that the country's competitive power will be maintained. A number of large companies in the Region have too many separate manufacturing units and could show real increases in the productivity of labour and capital if they were able to reorganise their production without fear of being forced out of the Region. Reorganisation would have the added advantage of providing surplus land and buildings that could be put to alternative uses.

8.33 The application of the third criterion involves making better use of the resources of the Region, including management, skilled labour, plant and buildings and communications. This criterion reinforces the previous one since the rationalising of separate factories is also a way of employing human and physical assets more effectively. An example of an important resource is the Region's network of roads and railways. Firms should be sited to take advantage of these facilities and as the pattern of communications changes so will the choice of sites to make use of them. This requires a flexible approach which is capable of adapting to economic needs. The application of the criterion would mean considering industrial expansion around the conurbation and other main industrial centres, which are becoming increasingly well placed in relation to communications. Growth in these areas may coincide with the availability of land for housing such that journeys to work are reduced and industry and housing can be developed in proper relation to each other. The aim would be to increase the return from the Region's large and continuing investment in communications.

8.34 The same situation arises over management and skilled labour. Both are nationally in short supply and if their effectiveness can be increased by putting them in charge of more resources, the result would be a rise in the growth rate. This approach would be particularly applicable to those small and medium-sized firms that could increase their output substantially without proportionately adding to their team of management and skilled labour. The problem for the owner-manager of moving entirely or of setting up a branch factory was discussed in para. 8.26. It is doubtful whether the managerial consequences of some of the moves that took place in the past were fully appreciated by either the Department or the firms concerned. We must avoid in future stretching limited management resources over too many sites. Robert Townsend's advice should be taken to heart:

> 'If your business is in Cleveland start or acquire an operation in Santa Barbara at your peril. Absentee management is fatal. And the disaster potential is equal to the square of the distance—measured in hours—between your home base and the new plant.'*

8.35 Before leaving the issue of the better use of resources, four examples of the changes that such an approach would have on present policies should be mentioned. The first concerns the amount of unused land, mainly industrial, that there is in the conurbation especially in the Black Country. A railway journey from Birmingham to Wolverhampton will confirm how much semi-derelict land lies each side of that railway line alone. To some extent this is a result of the operation of the i.d.c. policy (see para. 8.26). It may also be that more land has been designated for industrial use than is ever likely to be needed and that some should be released for housing. Here is a scarce resource which is being wasted and is detracting from the amenities of the Region into the bargain. A positive location policy would aim to make use of this land and would include a realistic assessment of the Region's present and future needs for industrial land.

8.36 The second example can be illustrated by reference to Chelmsley Wood where a major site has been developed for housing, but the people living there have to commute to the nearest industrial areas and those that cannot commute because of family ties can find no work. In this case women, many of them trained and wanting to work part-time, are lost to the regional workforce, because there is no local employment and so another type of resource is under-used. Where there is population growth on the scale of Chelmsley Wood, even though it may be in the conurbation, there is a case for allowing suitable industrial development.

8.37 Thirdly there are a number of smaller centres within the Region capable of expanding to meet their own needs for housing and local industry. Unless provision is made for the development of these centres they will not be able to contain their own population growth and the consequent drift to the main industrial centres will further increase the pressure on housing and all the supporting services in those centres. The same argument that is used to support the movement of industry to the assisted areas can be applied to justify allowing some industrial development in the smaller centres of the West Midlands. A positive location policy would look on these centres as part of the resources of the Region and build on a limited number of growth points outside the main industrial areas.

8.38 Finally it is worth considering how the proposed changes in location policy would affect the car industry, whose importance to the Region was brought out in Chapter 5. The problem for the U.K. car industry is that it requires heavy capital investment at a time when its profitability is low. Various factors have contributed to this position particularly the slow rate of growth of its home market resulting from Government regulations, the increase in foreign competition and the additional costs of having manufacturing units that are more dispersed than those of their competitors.

8.39 The result of past policies on the distribution of industry has tended to relocate many capital intensive processes such as body pressing in the assisted areas, leaving the labour intensive processes connected with finishing and assembly nearer to the market. Apart from whether this is achieving the aims of regional employment policy, it leads to bulky and easily damaged parts being extensively trunked over long distances. A cost penalty of the order of 5% is incurred by making bodies away from the point of assembly. On top of this there are all the other costs associated with a multiplicity of manufacturing units, like the diversion of management effort and the duplication of administrative services. There are also the more general costs of dispersal, which come from weakened links with suppliers and increased stockholding.

8.40 These cost disadvantages assume a special importance in the light of the U.K. application to join the E.E.C. Not only is the European market expected to be a major area of expansion for British cars, but there will also be increased competition in the home market from European manufacturers. In this context the necessity for the U.K. car industry to be internationally competitive cannot be over-emphasised. It will only be achieved with a greater degree of manufacturing concentration than exists at present and concentration in parts of the country that can provide both skilled labour and proximity to suppliers and are also well placed geographically to service the wider European market. A logical outcome of this country joining the E.E.C. would be for the U.K. manufacturers to have their cars assembled by their European competitors and for them to offer the same facilities here to European manufacturers. European manufacturers would not be likely to be interested in such arrangements, unless their cars were to be made at integrated plants of the same scale as those they operate themselves.

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* *Up the Organisation*, Robert Townsend, Michael Joseph.

8.41 In terms of our proposed criteria the car industry would be encouraged to put forward whatever overall plans for rationalisation are required to place it in the strongest possible competitive position. Those plans would probably allow very substantial increases in output without any increase in manpower. The test for the approval of those plans would primarily be their effect on unit costs and on the utilisation of resources. While the carrying out of a rationalisation programme depends on funds as well as on i.d.c.'s, the money can more confidently be found, if the plans are seen to be soundly based on economic considerations. Production concentration would raise difficult questions of regional employment and the re-use of vacated premises, but these must be weighed against the consequences if this key industry fails to hold its own in the markets of the world.

8.42 It would be misleading if the preceding paragraphs were to suggest that a revised set of criteria for i.d.c.'s would of itself dramatically alter the rate and pattern of growth in the Region in the short run. The most important determinant of regional growth is the state of the national economy. It is also appreciated that with the shortage of industry that is unable to move there is already a problem over priorities for the location of such industry as can move. The object of the new criteria would be to reduce the overall shortage through increased growth and to institute a different set of priorities. Their application would change the climate of opinion within the Region and would ensure that expansion took place wherever it was economically justified.

8.43 There is a further problem which deserves mention and that is the use of vacated industrial sites in the conurbation. There is no control over the re-use of such sites and as this allows an element of growth, often in unsatisfactory premises, that is outside the scope of the i.d.c. system it results in the system having to be applied more striclty in the case of extensions to existing sites. *Patterns of Growth** recommended that Government assistance should be given to local authorities to enable them where necessary to acquire vacated industrial premises and control their re-use. If this would enable i.d.c.'s to be given more liberally elsewhere, we would support the recommendation.

8.44 The criteria set out in paragraph 8.30 may already be taken into account, but if so they are not given the priority that we believe they should have. D.T.I. may also take as positive a view as it is able of its growth function, but this aspect of the Department's work needs to be got over to the firms in the survey that did not think it worthwhile to apply for an i.d.c. These points could be met in two ways. One is that the criteria used to judge i.d.c. applications should be published with an indication of the weight given to the various elements. This follows a recommendation of the Hunt Committee. Secondly a better understanding must be established between the Department and industry at local level to get across that the intention is not to inhibit growth, but to direct it in a sensible and economic way.

8.45 The approach that is being proposed is similar to that which would be adopted by a company in drawing up its own plans for expansion. The issue is one of balancing expenditure against improvements in the use of resources. Such an approach would need to take account of the operations of the company concerned as a whole and not look at one establishment in isolation. Applications for expansion on existing sites would be weighed against the improvements in effiency and return on investment that they would bring about. The greater the return the better the case for allowing the application.

A growth policy for services

8.46 The growth of the service industries is not controlled in the same way as manufacturing industry is by the i.d.c. system. Now that office development permits have been abandoned the development of services is a matter for the Region and is not subject to restraints from the centre. This is not to say that local planning authority controls do not raise certain difficulties over the way in which they may develop, but this is a situation which it is within our own power in the Region to alter.

8.47 It is not, for example, easy for the developers of out-of-town shopping centres to obtain planning permission for the right type of site with adequate car parking. The trend is towards 'one-stop' shopping, where those who shop by car expect to make all their purchases for the week on one site at one level and to be able to put the goods in their car without difficulty. Such shopping centres must be sited close to large centres of population if they are to be successful and so require sites on the outskirts of the main cities. Inevitably competition from these shopping centres affects the trade of the city centre shops, which also suffer from the consequences of congestion. If out-of-town shopping is what customers want, then it is unsound to restrict its growth by making it difficult or time consuming to get permission for its development. The effect will be to restrict the growth of distribution in total so depriving the Region of the distribution service it needs and reducing employment in distribution below the level it would otherwise achieve. There will not be a dramatic change in the balance between city centre and out of town shopping, but it is a trend that should be facilitated in the interests of overall growth. Quite apart from the reasons already given the range and quality of the shops is one of the amenities of the Region. In the long run it may be that some of the commercial sites in the city centres will be redeveloped for housing. This would restore life to these centres and help to counter-balance the commuter flow.

8.48 Attempts to assess the likely development of office employment in the Region were frustrated by the lack of figures. Such figures as there are do not distinguish between office sites at factories and independently located offices in other areas and so can only be used to determine trends in office employment for the Region and sub-regions. Growth in the office sector is important and accounted for over half the increase in all occupations in the Region from 1961 to

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* Paragraphs 120-122.

1966. It would therefore be helpful to have figures for economic planning purposes, which distinguished between office jobs which are tied to specific locations and those whose location in the Region is a matter of choice.

8.49 Around one-third of the Birmingham office population works in an area of about 1½ square miles in the centre of the conurbation. This is the major office centre of the West Midlands and accounts for 10% of all the Region's office jobs. As communications are improved the central situation of Birmingham should encourage a faster rate of office growth to take advantage of its key position geographically end of the investment that has given it this position. If Government departments are to be decentralised, the advantages of the West Midlands and the conurbation in particular should be given careful consideration: the location quotient of National Government Services is 0·5. Office rentals are still modest—£1·12 to £2 per square foot in the city centre and more office development would balance the decline in manufacturing employment in the conurbation.

8.50 Looking more generally at the position of the service industries in the Region, some steps that could be taken to locate their faster growth were outlined in Chapter 6. In considering a policy for the service industries, we have to build on the outstanding characteristic of their development, which is the way in which the different sections of the industry interact with each other. The more that the service sector develops in the Region, the more ancillary services are required and the more reason for new types of services to locate themselves in the West Midlands. The process of interaction can be shown if we take two examples, one relating to the services directly used by industry and the other to the effects of the proposed National Exhibition Centre.

8.51 The services directly used by industry include accountancy, legal, computer and financial services, employment agencies, consultancy services of all kinds and research organisations. Those providing these services will primarily be attracted to the Region by the amount and interest of the work they are likely to find here. This in turn depends on the awareness of managers of the value of these services to them and the ways in which they can be profitably applied. This awareness is in itself a result of the training and experience of the managers concerned; so the chain of cause and effect has an impact on the demand for services in two ways. There is a direct demand by industry for say accountants or management consultants, but in addition employing these specialists and applying their methods generates a further demand by managers to be kept up to date with management techniques. This is expressed in their requirements for courses which are met by the further education system and management training institutions of all kinds so stimulating the development and expansion of educational services.

8.52 Whilst this is not simply a regional matter, if the opportunities for acquiring management training and improving management skills are available locally, they are more likely to be taken advantage of, particularly by small and medium-sized firms. The question then comes back to what can be done regionally to promote both the growth of the services used by industry and industry's awareness of them. There would seem to be two natural starting points.

8.53 The first is for courses to be systematically provided in the Region in subjects which will influence the development of both manufacturing and service industries. The last five years has seen a considerable expansion in the provision within the Region of such courses which represents a significant change of policy on the part of the Further Education system, since the tendency in the past has been for it to respond to the demands made upon it, rather than to initiate them. Progress has inevitably been limited by the problems of financing courses for which there may be insufficient demand at the outset, but the growing collaboration between Further Education Institutions, Industry and the Industrial Training Boards, is producing a situation where the relevance of the new sorts of training which are being offered is being perceived.

8.54 Accountancy training has already been mentioned and computer and systems analysis training are other obvious fields. In all these areas, there has been a number of encouraging developments in the West Midlands. Once again, the process feeds on itself; as first class accountancy, computer and systems analysis training facilities are built up in the Region, the opportunities in these fields become better known in the schools and stimulate study of the subjects that lead on to this kind of training. Equally if the number of trained computer people in the Region increases, some will move into local firms and others will set up bureaux to sell their services to firms in a position to develop internal computer departments.

8.55 Language training would provide another example of the same approach. If there are known to be interesting courses in the Region that combine say modern marketing techniques with acquiring a good commercial knowledge of one or more languages, this would have its effect on the schools and would alert firms to the need for managers with these skills. Given the development of trade with Europe and the importance of the Region remaining competitive in world markets, there is a demand here to which industry may not yet be fully alive. This is not to overlook the record of some of the progressive institutions and firms in the Region in encouraging the learning of languages. The difference here and in the other examples given would be that the courses were part of a conscious policy within the Region to shape our own future.

8.56 The second means of stimulating the process is by putting more resources behind management education of all kinds in the Region, which has its small Business Centre, three universities in the conurbation and Coventry, four polytechnics and a first class further education network. The Region has not, to date, received from central funds anything approaching the financial support which has gone to the South East and the North West for the London and Manchester Business Schools, and this relative deprivation of a major industrial region has inevitably restrained the development within the West Midlands of post-graduate and advanced business courses. Nevertheless the basic structure is there, it is one of the assets of the Region and we should make more use of it. It is not simply a question of sending managers on courses, like shirts to the laundry, hoping they will come back the better for it. From the firm's point of view training must be part of a coherent management development policy however simple it may be. From the institution's point of view courses require to be followed up and it is necessary to keep in touch with the changing pattern of managerial needs. It is therefore an organic relationship with education and training influencing industry and vice versa with hopefully some movement between the practitioners of both.

8.57 The second example of the interaction between services is the proposed National Exhibition Centre.* We pointed out in paragraph 6.8 that little is known about the growth pattern of services and which services are critical to the development of other services. The N.E.C. could provide the stimulus that the Region requires for the growth of a range of services not so directly related to industry as those we have just been discussing.

8.58 The N.E.C. would be as its name implies the main national site for industrial exhibitions and trade fairs. It would be directly linked to Birmingham Airport, the main London to the North electrified line and the motorway complex. It would logically result in the European air service network using the Airport. The immediate effect of the construction of the N.E.C. would be an improvement in the Region's pattern of communications, which would further enhance its position as the country's industrial centre. This would lead in turn to more business for all services that are associated with the movement of people and goods, such as financial, insurance and factoring services, freight and road haulage businesses and travel agencies.

8.59 The influx of visitors drawn by the N.E.C. would constitute a demand for such services as hotels, restaurants and shops. It would also result in the development of conference centres and the provision of specialised clerical, duplicating, public relations and translation facilities as well as computer services and telecommunications. The closer contact that there would then be with overseas buyers would in itself be a direct stimulus to the Region's export business. Just as management training creates a demand for specialised services, so the services directly associated with the opening of the N.E.C., like hotels, would in their turn develop ancillary services such as frozen food distribution and dry cleaning.

8.60 The N.E.C. could be a development of the greatest importance, providing employment and encouraging business in itself, but above all acting as the growth point for a range of activities, which are at present under-represented in the Region.

New industries and the universities

8.61 In previous chapters the need for new science-based industries to be developed in the Region was discussed and the point was made that the West Midlands has only a small share of the technologically advanced industries, although ideally placed for their development. The issue is important for the Region since a proportion of new growth industries would be a prudent insurance against obsolescence. It would also make the movement out of the Region of mature industry a natural part of a dynamic and regenerative process. It is however important nationally as well, since it is widely accepted that a cause of the slow growth of the British economy has not been lack of innovation, but a failure to apply it. There has been no shortage of ideas, but they have not been turned into marketable products.

8.62 The kind of academic research that might be commercially developed in the Region includes holography, cryogenics, fluidics, ultrasonics and materials technology. Work in these fields is not confined to the universities. The polytechnics and technical colleges also have a part to play in the commercial development of research projects. A major growth area is in communication and information systems of all kinds and this is where an industry/university dialogue could be particularly fruitful in the West Midlands. While the basic location of computer manufacture is unlikely to change, there is no reason why the ancillary equipment and software side of the industry should not increasingly be centred in the Region. It would certainly have an effect on the adoption of advanced methods of control by the rest of the West Midlands industry.

8.63 The development gap between research ideas and marketable products has various causes but an essential aspect of it is that a high proportion of the scientific resources of the country are in universities and research establishments, while the marketing and production skills are in industry and there is not enough interchange between them. There are however ways of bringing these two groups closer together in the Region to the benefit of the West Midlands and the country as a whole.

8.64 The first is to encourage the development of science based companies in the vicinity of appropriate universities by setting aside land for industrial parks. The success of the Massachusetts Institute of Technology in this respect is well-known: in the space of four years 21 new companies, generating $76 million of additional business, started in the Greater Boston area. Their importance lay not in their existing turnover, but in the fact that they were nearly all working in advanced technical fields. This in turn holds out the likelihood of future growth and also has an impact on established business. The techniques and methods of management developed in companies working in advanced fields rub off on the rest of industry through the movement of staff, discussions at seminars and the use of common services.

8.65 The Americans have done a good deal of research into the conditions under which this type of university/industry interchange can flourish. A distinguished Committee reported to the President on this subject and perhaps their most significant finding was that it was only under special conditions that this kind of relationship proved productive and that the growth had occurred for example in Boston and Pittsburgh, but not in Philadelphia and Chicago. The finding is important because it means that attempts to encourage such developments at universities in areas where the necessary conditions are not met will fail. If research contracts are allotted to universities geographically to help spread regional growth and if industrial parks are sited only on the basis of stimulating economic activity in the assisted areas, it is likely that scarce resources will be wasted.

8.66 The conclusions of the President's Committee as to the conditions required to encourage this type of interaction and growth were as follows:

> 'In our over-all deliberations, we came to some general conclusions about the kind of total environment that seems to encourage the creation of new technological enterprises. Included in this environment are:
>
> - Institutional and individual venture capital sources that are (i) "at home" with technologically oriented innovators and (ii) have the rare business appraisal capabilities necessary to diagnose the prospects

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* See frontispiece

of translating a technical idea into a profitable business.

b Technologically-oriented universities, located in an area with a business climate that encourages staff, faculty, and students to study and themselves generate technological ventures.

c Entrepreneurs, who have been influenced by example of entrepreneurship (for it is our contention that entrepreneurship breeds entrepreneurship).

d Close, frequent consultations among technical people, entrepreneurs, universities, venture capital sources, and others essential to the innovative process.'

8.67 In sum it is vital to find an area where banks, universities and businessmen all have the right outlook towards technical progress and where there are opportunities for them to meet and have constructive discussions. There is no region which fulfils these strict conditions better than the West Midlands and with Aston and Birmingham Universities' connections with industry and with land available, for example near Warwick University, for an industrial park, there is every chance of developing university/industry relationships of the right kind. Such a development could be a feature of the technological leadership that the U.K. is in a position to provide for Europe.

8.68 A second course of action would be to encourage the growth of university based business studies in the Region and to have at least one major business school in the West Midlands. The presence of a business school on a university site will of itself improve the flow of ideas between businessmen and academics. The teaching staff of the business school are a link between the university world and that of industry. The students also have a part to play as they are likely to look at all the work that is going on in the university in an enquiring way. The enterprising among them will want to find ideas capable of development, so that they can start themselves off in business as soon as they complete their studies. A business faculty is one way of bringing together the technical skills of the university and the entrepreneurial skills of the market-place.

8.69 The final step would be to site industrial Research Associations wherever possible alongside universities in areas where their sponsoring industry is well-established. They again form a link for the movement of ideas and staff between industry, government and higher education. It must be a disadvantage to the extension of research findings that only four Research Associations are based in the West Midlands. At a time when the structure of Research Associations is under review and some rationalisation is already taking place, it is worth pointing out the part they could play in shortening the cycle from the research idea to its practical application, if they were to move physically closer to the centres of their industries.

Government and the Region

8.70 It may seem outside the scope of an economic appraisal to refer to the structure of government. It does however have important economic implications, for example in relation to capital investment in the Region. The corollary of making recommendations about regional economic policy is that there should be a body with the power to carry them out. This would require certain changes in the present structure.

8.71 In the first place there is a need for more power to be devolved from the centre to a body in the Region which could 'assume functions now concentrated in an overworked system of central government' in the words of the Royal Commission on Local Government. With devolution would have to go decentralisation in order to move the point of decision from the centre to the Region. The centre should become more responsive to the needs of the Region and able from an economic standpoint to react faster and more effectively.

8.72 Secondly, national policy is planned on a functional basis with separate departments responsible for services such as health, education and housing. From the point of view of the West Midlands however it is the way in which the regional components of their separate plans combine that is important and has its impact on the Region. The development of a new town like Telford involves every Department of State and the efficient planning of that development depends not on the soundness of the national policies towards new towns of the departments concerned, but on how effectively they integrate their particular sections of the plan for Telford. For the Region it is the horizontal co-ordination of central government on a geographical basis, which is at least as relevant as its vertical co-ordination by function.

8.73 The next point is that there is a gap in the formal structure of government between the central government and the local authorities. The Economic Planning Council is at present the only regional link and no doubt this will be a point that will come under the Crowther Commission's review. It is necessary to have some means of co-ordinating the plans of local authorities regionally and of implementing national policies in detail at the regional level. The further development of the civil service on a regional basis would be critical to the success of establishing a new body that was going to be the bridge between central and local government.

8.74 The economic justification of the need for a regional body can be seen in the light of the West Midlands Economic Planning Council's experience in advising on central government's plans for capital investment in the Region. The question of capital investment in the Region underlines the two problems to which we have already referred. Government expenditure is allocated on a functional basis and the process of allocation is distinct from that by which the local authorities decide on their capital expenditure programme.

8.75 It is the responsibility of central government to decide the proportion of national investment that should go to each region. The region however is in a better position than central government to decide regional priorities and so how a given sum can best be allocated. In the same way it would make economic sense to consider total capital expenditure in the region and not just that part provided by central government.

8.76 One of the threads that runs through this appraisel is the way in which the various economic features of the Region interact. It is therefore important that their development should be balanced and that they should be considered as a whole. Education, communications and amenities have all been mentioned in our report several times and to some extent they represent alternative ways of achieving the same ends. The growth of services could be stimulated by any of them or a combination of all three. In a wider sense they are directly competing for whatever funds are available for investment in the Region. The W.M.E.P.C. carries out a valuable task in advising on government expenditure in the Region, but there is no point at which the effects of transferring differing amounts of resources between competing uses is weighed up. Much less is there any means of actually making such transfers.

8.77 Investment by the nationalised industries in the Region is not at issue as they must take an overall view of their investment plans in relation to their own financial targets. Their capital expenditure does not have the same direct regional significance as expenditure on roads and housing. The investment plans of the nationalised industries are nevertheless an essential element in the economic planning of the Region and the industries concerned have been consistently helpful in providing the W.M.E.P.C. with information on them.

8.78 The traditional argument against allowing central government funds to be transferred between functions at the regional level is that it would lead to a departure from national standards. This is a weak argument on several grounds. There are already wide variations in the level of provision of, for example, hospital services across the country, so that the national standards referred to are to some extent notional and the ability to transfer funds would be as likely to reduce the present variations as increase them. Equally those who use such services in the Region are as capable of evaluating how their standards should be related to each other as is central government. If therefore they did want to make some alteration to the balance of investment in the Region, the existence of a national standard is not a valid reason for not even considering it on its merits. It would also be wrong to assume that major transfers of funds are at issue; this would imply that the present system misallocates resources on a large scale, which is not the case. From the point of view, therefore, of departure from national standards any transfer of funds between functions would only have a marginal effect, but an effect that could be appreciable in terms of return on investment.

8.79 The object of proposing that the investment plans of central and local government should be reviewed in the Region is not in order to set up new controls over expenditure. Those who provide the money must decide how it is to be spent, but they must also ensure that the best return is obtained from necessarily limited resources. This can only be done for the Region if a comparison is made of the alternative ways of allocating a given expenditure.

8.80 The point can be made more explicitly by taking the example of central government's capital expenditure programmes for education, roads and housing in the Region. These programmes form part of what are essentially national plans for the development of services in each of these fields. The proposal is that when they are being prepared they should be formally reviewed at the regional level to consider both the determination of priorities within each function and the determination of priorities between functions. The first part of this review is already being carried out by the W.M.E.P.C. which can recommend reallocations of expenditure within the investment programme for education in the Region. To carry out the second part it is necessary to know separately for education, roads and housing what the effects on the Region would be if the expenditure on each was increased or reduced by a given amount; what new services would be provided with the extra allocations and which existing services would be curtailed if the present allocations were reduced. Only then is it possible to decide what the optimum allocation of money between education, roads and housing should be in regional terms.

8.81 It is academic to review capital expenditure in this way unless there is the possibility of switching some money from roads to education, if this produces a better return to the Region. The question of the transfer of funds between different uses is not therefore an end in itself, but the means of ensuring the best return from a given total expenditure. It is appreciated that to attempt to co-ordinate government expenditure on a regional as well as a functional basis introduces considerable administrative and political complications. From the Region the effort would appear to be well worth making and unless it is tried it will not be possible to say what improvement in economic effectiveness will result.

8.82 The argument is not that the rate of spending by local or central government in the Region should be increased, but that what is already being spent could show a better return in the regional and national interest. A body which was in a position to review the total funds available for development in the Region whatever their source and advise on their allocation according to regionally established priorities would be making better use of our limited resources, which is the central theme of this appraisal.

CHAPTER 9 CONCLUSIONS AND RECOMMENDATIONS

9.1 This final chapter brings together the main points made in the body of the report, and includes a complete summary of the conclusions reached and the recommendations made. The object of the appraisal was to review the economic future of the West Midlands, in order to decide whether action was needed and if so what form that action should take. The appraisal has left the Working Party in no doubt that if the West Midlands continues on its present course its rate of growth will not be sufficient in the years ahead to meet regional or national economic needs, nor will it be able to adapt fast enough to the changing markets in which it has to compete. This is partly a consequence of its industrial structure and partly a consequence of policies which have impeded both growth and adaptability. It is therefore necessary for the Government and the Region to adopt new policies with the aim of making the most of the economic potential of the West Midlands. Our views on how this can best be done are set out in the paragraphs that follow.

Policy for the Region

9.2 At national level it is essential that there should be a positive policy of economic growth for the West Midlands. The Region is the industrial heart of the country, supplying both the home market and a substantial proportion of U.K. exports. The test of a positive and constructive policy is the degree to which it will improve the capacity of the West Midlands to develop industrially in an increasingly competitive world.

9.3 We believe that such a policy is both necessary and practicable and that it should have three main aims:

- a to maintain the Region's competitive ability;
- b to make the most of the Region's economic potential;
- c to build on the Region's capacity for innovation.

9.4 The carrying out of these aims would have certain consequences in practice. They would involve changing the industrial climate to one that encouraged growth, for without growth the investment that is needed for modernisation cannot take place. They would mean ensuring that the present range of manufacturing industry on which the Region depends has every incentive to invest, to rationalise and to take advantage of technological change.

9.5 From an employment point of view the policy would require sufficient economic expansion to offset any decline in the demand for labour and the provision of educational and training facilities so that those living in the Region could make the most of their abilities and keep pace with the changing industrial structure. The aim must be not just to provide enough jobs, but an adequate range of jobs in terms of skills and occupations.

9.6 The policy must include the encouragement of new industry in the Region. This is an insurance against technological obsolescence and is necessary if the process of adaptation to change is not be be obstructed. It is also impossible to combine a policy for growth with one which is too restrictive about what can grow. Finally the Region is in a unique position to exploit new ideas and techniques and without this infusion it will not make the contribution to innovation that it could.

9.7 Our concern is to build on the competitive strength of the Region, so that it is enabled to make the most of its resources. This requires a positive approach to investment, employment and industrial structure in the West Midlands.

9.8 Within the overall policy particular attention should be given to the development of the service industries. This is the growth sector of the economy and the West Midlands is under-represented in it. As services are developed they encourage the growth of other services; the development of the proposed N.E.C. will be of great importance in giving an initial stimulus to this process. Many of the services are also essential for the continued efficiency of manufacturing industry and the growth of a wide range of services is an integral part of meeting the employment objective of providing a variety of job opportunities.

Implementation

9.9 A new approach on the part of the Government to industrial location would be required to put the proposed policy into practice. The criteria that we recommend should be used to guide decisions on applications by firms to expand in the West Midlands are

- a the achievement of regional growth at least cost;
- b the improvement of the efficiency and competitive ability of the Region;
- c obtaining a better return from the Region's existing assets;
- d bringing about a more balanced industrial structure in the Region.

9.10 The application of these criteria would result in a change in policy nationally towards the distribution of industry. Whilst this was not the object of our proposals it is the inevitable outcome of them and is an issue which must be faced. In the short run, our proposals would not greatly increase the growth rate of industry in the Region which is mainly determined by the state of the national economy. They would however markedly alter the industrial climate in favour of investment and modernisation and so lay the foundations for future expansion. They would alter the role of the D.T.I. at least as it is seen by industry and make its primary task that of assisting the growth of industry in the Region. The new criteria would give a high priority to industrial developments that were designed to increase efficiency.

9.11 A change in the criteria controlling industrial location would remove a barrier to the introduction of new industry to the Region, but would not of itself promote its growth. We therefore recommend a positive policy of collaboration between industry and universities in the Region to encourage the siting of technically advanced businesses in the vicinity of universities.

There has been little of this type of growth in the U.K. because the conditions under which it can flourish are specific and limited and may indeed only apply in the West Midlands, where it has deliberately been encouraged. More university-based business schools in the Region would also help to translate some of the original work that goes on in universities into marketable techniques and products.

9.12 The evidence we received on the growth potential for services suggested that the central position of the West Midlands gave it an advantage on which the Region should capitalise. Services are less tied to a particular location than most of manufacturing industry and so will expand where conditions favour them. The services connected with industry will be attracted by the level of activity of industry in the Region, by the degree to which new industry becomes established and by the willingness of West Midlands managers to make use of them. The willingness of managers to use services depends on their awareness of the way in which such services can help them run their businesses more profitably. The relevance of management education and training in this context is in making managers aware of these possibilities and it has therefore a crucial role in improving industrial efficiency and in encouraging the growth of services.

9.13 We recommend two ways of achieving a faster rate of growth of services in the Region. The first is to have a deliberate policy of providing training in skills which will influence the development of the Region. The second is to put more resources behind management education. In addition we have set out more detailed proposals at the end of Chapter 6.

9.14 The greater degree of collaboration between industry and the further education system that is proposed in various places in the appraisal should not be seen as subordinating education to industrial needs. The aim is to ensure that individuals in the Region receive the education and training that will enable them to realise their personal potential; this at the same time assists the Region to improve its growth and competitiveness. The further education system in the West Midlands is involved in the Region's future and has its own contribution to make in deciding what the Region's aims should be and in helping to achieve them.

9.15 Links between industry and education will need improving if closer working between them is to be effective in practice. The educational system cannot respond to changes in the pattern of life and work in the Region, unless it knows what those changes are likely to be. This will require a positive attempt by industry to foresee future developments and discuss them with schools and colleges, so that the pupil concerned can make considered choices about their education and their careers.

9.16 Action is also required in relation to the resources of the Region. They have a direct bearing on the costs and efficiency of industry; they form part of the general amenities of the Region and so have a role in attracting people to the West Midlands. Water and sewerage is a most critical area; the present position is serious enough but even immediate plans to relieve the effluent problem must take account of an inevitable and proper rise in standards. No one is as yet in a position to know what improvements are attainable in water standards at what cost and by when. The essential first step is to review the alternative ways in which the Region's water resources could be developed over the next ten to twenty years and put figures against them.

9.17 A forward-looking overall plan is also required for transport and communications in the Region. The West Midlands holds a key position geographically but this advantage turns on the provision of a good communications network. The trunk road programme if it is kept up to the timetable will represent a major improvement, but to give a proper return it must be closely co-ordinated with the local authority road programme. With rail and air services a marketing approach is needed, appreciating the opportunities for developing the system rather than looking for reasons to cut it back.

9.18 Finally our appraisal has emphasised the importance of central government becoming more responsive to the needs of the Region. This will require devolution and decentralisation to the Region both for the forming of policy and its execution. There should be a forum in the West Midlands that can take regional decisions on the points that we as a Working Party have raised and put them into effect. Central government is based on functional divisions that apply across the country, but what is of concern to the West Midlands is the co-ordination of those functions at the regional level.

9.19 In addition there is a gap in the formal structure of government between central government and the local authorities, which at present is only bridged on an ad hoc basis by the Regional Economic Planning Council. Any change in this situation must await the report of the Crowther Commission but the economic justification for a regional body has become apparent from the work done by the W.M.E.P.C. in advising on the government's capital expenditure plans for the Region.

9.20 The various economic features of the Region interact and it is therefore important that their development should be balanced and that they should be considered as a whole. They represent competing uses for whatever funds are available for investment in the Region. There is however no point at which the effects of transferring resources between uses can be considered and no means of making such transfers.

9.21 The argument is not for increased expenditure, but for getting better value from what is already being spent. This means that those who have to make the decisions on spending must have the economic facts on which to base them, which in turn involves comparing the alternative ways of allocating a given expenditure. The resources that central and local government have for investment in the region are necessarily limited; it is therefore essential that the best use should be made of them. This can be done if they are looked at in total and if the decisions on priorities and allocations are made within the Region.

9.22 The object of planning is to look ahead and offer choice. The different courses of action that might be followed must be foreseen and their probable consequences established. It is then for those who will be effected by these courses of action to choose the way ahead. There is in the Region the experience, the judgement and the will to plan the future of the West Midlands and to carry out those plans. Our concern is that the citizens of the Region should be encouraged in their own and the national interest to play their full part in making the most of the considerable resources of the West Midlands.

SUMMARY OF CONCLUSIONS AND RECOMMENDATIONS

CHAPTER 1

Recommendations

1.4 The Appraisal should be regularly followed up.

1.4 There is a need for better regional economic statistics and for the establishment of a regional data bank.

CHAPTER 2

Conclusions

2.6 The ability of the country to cope with the problems of imbalance between the regions depends on maintaining the economic strength of regions such as the West Midlands.

2.9 West Midlands dependent on retaining its competitive ability in manufacturing.

2.13 Service industries in the West Midlands will have to grow at least at the national rate if there are to be sufficient job opportunities.

2.18 Prospects for the West Midlands will be affected by the decisions taken on regional planning problems.

2.23 It is important to know more about the value of the Region's output.

2.36 The significant contribution to the balance of payments made by the West Midlands.

Recommendations

2.24 The Birmingham University study should recommend how value indices of output can be improved.

2.26 There should be a positive economic policy for the West Midlands, along the following lines:

2.32 Maintaining the competitive capacity of the Region;

2.32 Making the most of its economic potential;

2.34 Building on its competitive strengths;

2.35 Encouraging reinvestment and taking advantage of the technological change;

2.38 Providing an adequate range of jobs to meet the employment needs of the Region;

2.39 Making more intensive use of fixed assets;

2.41–Selectively introducing new industry; as an
42 insurance against obsolescence and because the Region is in a unique position to exploit new ideas.

2.44 Summerises the objectives of a positive economic policy for the Region.

CHAPTER 3

Conclusions

3.13 The Region has the highest activity rates in the country.

3.16 Total unemployed at the peak of each succeeding cycle has been rising since 1951.

3.18 Type and duration of male unemployment causes concern.

3.19 West Midlands intermediate position in the national economy shown by the net output value figures.

3.23 Average weekly earnings for full-time men second to those of the South East, while for women below the national average.

3.27 Projected population of working age in West Midlands will rise by 140,000 in 1971–81.

3.27 Assumption that there will be emigration from the Region after 1971 is questionable.

CHAPTER 4

Recommendations

Construction

4.9 Industrial and residential zones should be less rigorously separated in the West Midlands.

4.10 I.d.c. control should be relaxed for schemes of improvement and rationalisation.

4.13 Public expenditure on civil engineering should be kept stable and road construction teams kept together.

4.15 The firm price contract policy should be reviewed.

4.16 Research should be extended.

4.20 Demand fluctuations should be reduced in the interests of small and medium-sized firms.

Pottery

4.32 Local Authority sanitary ware requirements should be standardised to reduce costs.

Agriculture

4.49 Universities in the Region should take an increased interest in agriculture, particularly veterinary research.

4.53 The existing network of minor roads should be maintained.

4.54 The problem of agricultural pollution should be kept under review.

CHAPTER 5

Recommendations

Metal-working

5.3 There is a considerable need for retraining based on effective manpower forecasting.

5.3 Review the length of apprenticeships.

5.5 Need for better training, manpower planning, industrial relations and forecasting in the metal using industries.

5.5 Nationalised industries and big firms should improve their capital expenditure forecasting and avoid peaking.

5.7 Another period of uncertainty over entry into Europe must be avoided.

5.8 Facilities planning and equipment utilisation in assembly should be improved.

5.9 There should be the closest possible liaison between industry and the universities.

Mechanical engineering

5.30 Productivity in the U.K. machine tool industry should be improved.

5.32 Capacity in the machine tool industry should be increased, because of the cyclical nature of demand.

Electrical goods

5.40 Government spending on research and development in electricity supply should be extended to the rest of the industry.

Vehicles

5.63 Manufacturers must be able to see a competitive return on new investment and an acceptable overall return.

CHAPTER 6

Conclusions

Present trends

6.2 Service industries are under-represented in the West Midlands.

6.8 The service industries with which we are concerned are those that are fast growing, essential for the efficiency of existing industry and attract other services.

Distributive trades

6.13 The West Midlands is increasingly becoming a warehousing and distribution centre.

6.14 The reduction in the numbers employed in distribution is likely to continue.

Insurance, banking and finance

6.17 No major change expected in insurance, banking and finance over the next ten years except possibly building societies.

6.19 The conurbation is ideally located as an insurance centre.

6.20 Building societies are likely to continue their expansion.

Professional and scientific services

6.25 The number and quality of entrants into the accountancy profession regionally is improving.

6.29 Recruitment of doctors and nurses to the West Midlands suffers from the attraction of the South East and the lack of amenities in parts of the Region.

6.31 A good standard of medical and dental services is essential in itself and an important part of the amenities of the Region.

6.36 The Region is an ideal location for architectural practices because of its central position.

6.38 The ability of the West Midlands to attract management consultants will depend on the level of activity, the proportion of new industry, good communications and the receptiveness of management.

Miscellaneous services

6.41 The hotel and catering industry has good growth potential.

Factors affecting growth

6.43 The employment position is not expected to hold back the growth of services;

6.46 Nor is there any reason why growth should be held back by lack of suitable accommodation.

6.47 Services will expand where conditions favour them and communications, amenities, facilities for education and training, the location of head offices and the availability of other services were all cited as important in this connection.

Economic balance within the Region

6.48 A faster rate of growth of the service industries is unlikely over the next ten years, unless there is:

a. a positive industrial policy geared to growth;
b. more investment in infrastructure;
c. direct action to assist the service industries.

Recommendations

Distributive trades

6.16 Firms in the Region should be encouraged to use the consultancy services available.

Insurance, banking and finance

6.22 Branches of merchant and overseas banks should provide the full range of services.

Professional and scientific services

6.31 There should be close liaison between industry and the medical profession.

6.32 Advantages of concentration of consultants should be recognised.

6.33 Investment in the Region's hospitals should be increased and a more effective differential salary scheme considered.

6.36 Better facilities and more funds should be provided for architectural training.

6.38 A major business school should be sited in the West Midlands.

Factors affecting growth

6.43 More training in business administration should be provided.

6.43 School leavers should be made more aware of the openings in the service industries and the training required.

6.44 There should be closer collaboration between the professions and the universities.

6.45 Region must support the development of the service industries in those areas that can attract them.

6.46 There is a need for office development in the overspill areas.

6.46 Structure plans throughout the Region should recognise the importance of providing for industry growth.

Economic balance within the Region

6.49 Summary of action required to achieve a greater rate of service industry growth.

CHAPTER 7

Conclusions

Water and sewerage

7.3 Unless more vigorous action is taken inadequate facilities will act as a brake on the Region's development.

7.9 There is public concern to see water standards improved.

Transport and communications

7.12 The Region is dependent on an effective system of communications to make the most of its central position.

Roads in the Region

7.18 The adequacy of the road programme turns on meeting the timetable.

7.18 The peak period of growth in the number of vehicles is from 1970–80.

Rail, passenger and freight

7.20 Electrification has resulted in a substantial increase in passenger traffic.

7.25 Lines once closed remain closed because of the high cost of bringing them back into service.

7.26 Public transport must be available in the rural areas.

Air services

7.32 The development of services between Birmingham and Europe would relieve London Airport.

Fuel and power

7.41 Fuel and power available in the Region in a competitive market.

7.41 Employment will fall in the industry as a whole.

Education and training

7.44 There has been a rapid expansion of facilities for further education.

7.46 Technological change requires sufficient people with scientific skills and a good basic education for all.

7.50 Industry must make the further education system aware of its needs and priorities.

7.51 Specialised educational institutions are a way of increasing the number of qualified people in the Region.

7.52 Medical equipment and artificial spare parts could be a growth area for the Region.

Technological assistance

7.53 There are only 4 Research Associations in the Region and no university industrial units.

Small manufacturing firms

7.55 Small firms employ over 300,000 people in the Region and are of considerable economic importance to its future.

Environment

7.64 Amenities are economically important because they affect location decisions.

Recommendations

Water and sewerage

7.9 Water and sewerage requires urgent attention in the Region and must take into account the need to improve standards.

7.10 Action should include:

  a. Reduction of domestic water consumption:
  b. More recirculation and use of lower grades of water in industry;
  c. Promotion of investment in effluent treatment;
  d. Bring water and sewerage under a single authority with close contacts with industry.

7.11 A regional strategy for water resources should be prepared and costed.

Roads in the Region

7.17 A third lane should be added to the M5.

7.19 Road investment priorities should be assessed within the Region.

7.19 Trunk road planning should be closely tied to local authority road planning.

Rail, passenger and freight

7.24 A comprehensive view of road and rail services is required to meet commuting demands economically.

7.25 An overall communications plan is necessary for the Region taking account of long-term costs.

7.26 Better public transport services should be provided in the rural areas.

Air services

7.31 Birmingham should be linked by air with the main European industrial centres.

7.35 Transport needs an aggressive marketing approach.

Fuel and power

7.37 I.d.c. policy should take account of displaced miners.

Education and training

7.45 Industry and schools should make the advantages of further education a reality to school-leavers.

7.47 More discussion needed in the schools about the future pattern of life in the Region.

7.49 There should be more interchange between industry and the teaching profession.

7.51 Consideration should be given to the advantages of siting specialised educational institutions centrally.

Small manufacturing firms

7.58 The right advisory services for small firms should be provided in the Region.

7.59 Small firms should be encouraged to move into the service industries.

7.60 Technically advanced small firms should be specifically encouraged.

Environment

7.66 The amenities of the West Midlands should be made better known.

CHAPTER 8

Conclusions

Regional development

8.4 Economic facts of planning proposals must be established and the opinions of those affected by such proposals sounded.

8.6 The short-term options are peripheral growth or development in the new and expanded towns.

8.6 The longer-term options are between corridor growth and free-standing towns.

8.6 The critical question is what the balance between the options should be.

8.14 At the most the new and expanded towns will house as much of the growth in population as the conurbation.

8.18 The W.M.E.P.C. has increasingly questioned industrial location policy.

8.25 The operation of the i.d.c. policy at present discourages growth and modernisation, leads to the under-utilisation of resources (8.26) and works against the growth of new industries (8.27).

8.40 A greater degree of concentration is necessary if the car industry is to maintain its competitiveness.

8.42 The most important determinant of growth is the state of the national economy.

A growth policy for services

8.48 Growth in the office sector is important and accounted for over half the increase in all occupations in the Region 1961–1966.

8.57 The National Exhibition Centre could provide the stimulus for the growth of a range of services in the Region.

New industries and the universities

8.61 The West Midlands has only a small share of technologically advanced industries although ideally placed for their development.

Government and the Region

8.72 The co-ordination of central government functions on a regional basis is important.

8.76 The economic features of the Region interact, it is therefore important that their development should be balanced and they should be considered as a whole.

8.78 The transfer of funds between functions would not cause a serious departure from national standards, but could improve the return on investments.

8.82 A body which was in a position to review the total funds available for development in the Region whatever their source and advise on their allocation according to regionally established priorities would be making better use of our limited resources.

Recommendations

Regional development

8.7 Better co-ordination is required between regions and the plans for development along the line to the South East should be studied.

8.15 The research programme in *Patterns of Growth* should be carried out.

8.21 Emphasis should be placed on methods of achieving the required movement of firms by financial incentives.

8.23 Financial incentives should be used to attract firms to the new towns.

8.30 New criteria for the granting of i.d.c.'s should be the basis of a positive industrial location policy for the Region:
  a. achievement of regional growth at least cost;
  b. improvement of efficiency and competitive ability of the Region;
  c. obtaining a better return from the Region's existing assets;
  d. bringing about a more balanced industrial structure in the Region.

8.31 The objective of D.T.I. should be to promote industrial growth.

8.35 Better use should be made of unused industrial land.

8.36 More development should be considered near major housing sites and in smaller centres (8.37).

8.43 Government assistance should be given to control the re-use of vacated industrial premises.

8.44 The i.d.c. criteria should be published.

8.44 A better understanding should be established at local level between D.T.I. and industry.

8.45 A company's total operations should be taken into account when considering the granting of an i.d.c. as should the overall return on investment.

A growth policy for services

8.47 The growth of out of town shopping should not be restricted.

8.48 Better office employment statistics should be provided.

8.49 The West Midlands should be considered as a site for dispersed Government offices.

8.53 Courses should be provided in subjects that will influence economic growth such as accountancy, computers and systems analysis (8.54) and languages (8.55).

8.56 More resources should be put behind management education.

8.60 The National Exhibition Centre should be supported because it will act as a growth point.

New Industries and the universities

8.64 The development of science-based companies alongside universities should be encouraged.

8.67 The West Midlands is the region for this kind of development as it meets the strict conditions for success established in the U.S.A.

8.68 University-based business studies should be encouraged and a major business school established.

8.69 Industrial Research Associations should be sited near universities in areas where their sponsoring industry is well established.

Government and the Region

8.71 There should be devolution and decentralisation to the Region.

8.73 A bridge is needed between central and local government.

8.79 The best use can only be made of resources if the alternative ways of allocating given expenditure are compared.

8.80 It is necessary to know the effects of transferring differing amounts of resources between competing uses.

8.81 There must also be some means of making such transfers.

APPENDIX I

WORKING PARTY TERMS OF REFERENCE AND METHOD OF WORKING

1. In December, 1968, the West Midlands Economic Planning Council set up a Working Party with the following terms of reference: 'To examine and report on the prospects and nature of economic growth in the West Midlands in the short and medium term; the practical problems involved and action required within the limits imposed by national considerations to enable the Region to play its part in the economic development of the country and to meet the needs for adequate employment opportunities for the growing population of the Region'. At its initial meeting the Working Party decided that they would regard 'short-term' as the next five years and 'medium-term' as up to 1981.

2. The Economic Planning Council agreed that the Working Party should consist of Council representatives of industry, trade unions, local government and the universities, together with outside representatives from these spheres, and representatives of the Birmingham Chamber of Commerce and Confederation of British Industry. The list of members is at Appendix II.

3. The Working Party began by examining all the available statistics on the economic structure of the West Midlands. This gave us a comprehensive view of the present situation and the trends that led up to it. It also enabled us to pick out three groups of industries to which we would need to give special attention. The first was industries which were important to the Region because they were large employers, and because they were particularly concentrated in the West Midlands; the two criteria on the whole go together. The second group comprised industries which were under-represented in the Region and had a location quotient* of less than unity. The third group were industries which were growing nationally and to which the Region would therefore need to look to provide growth for the Region, independantly of their present degree of concentration.

4. The metal working industries clearly come into the first category, since they employ 38% of the working population of the Region, and their future prospects are critical for the Region in the medium term. Examples of the second category are chemicals and dyes (location quotient 0·4) and insurance, banking and finance (location quotient 0·5). The fact that an industry is under-represented in the Region is not of itself meaningful, but it invites the question why this should be so and whether it is important from a regional point of view. The final category is exemplified by the service industries as a whole, which will be the main area of employment growth nationally between now and the end of the century.

5. Each member of the Working Party undertook a series of interviews with both national and regional trade and other associations, from whom they obtained broad views of the present situation. Meanwhile we had made available to us the considerable volume of statistical data, both from these associations and from Government departments. Much of the information obtained in this stage was of a national rather than regional character.

6. In order to interpret this information in regional terms, the Working Party decided to have discussions with a selection of the leading firms in the West Midlands Region covering all the major industries, together with the services including the professions. These interviews were carried out by members of the Working Party to an agreed pattern and at the same time views in writing were sought from a number of bodies and followed up where necessary by interviews.

7. From Government departments we received up to date factual papers on the infrastructure* of the Region covering such subjects as communications, energy, educational and social services, water and drainage. Throughout, the Working Party has concentrated on the specifically regional implications of all the information and views that it received. This will account for the omission of certain items of economic significance. For example, there is no detailed discussion of energy policy as it affects the Region, because after collecting a good deal of material on energy sources, we came to the view that developments in the Region would not be held up by lack of power or suffer from increased costs relative to other regions through lack of competition between suppliers of energy. In effect, we have sought to avoid writing an economic encyclopaedia of the West Midlands, although we have the makings of one in our background papers.

8. It was then necessary for the Working Party to come to a view about the future prospects of the industries we have been examining. For this purpose, the industries concerned were divided into four groups, and a section of the Working Party looked at each. To obtain a consistent approach between the Groups, we drew up a paper covering the questions to which we felt answers were needed in coming to our conclusions, dependent upon the industry concerned.

9. The information on which we have based our conclusions was mainly gathered during 1970 and in general reflects the economic circumstances of the time.

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* 'Location Quotient' is defined in the footnote to paragraph 3.6.

* 'Infrastructure' is defined in the footnote to paragraph 6.47.

APPENDIX II

LIST OF WORKING PARTY MEMBERS

G. A. H. Cadbury (Chairman), Managing Director, Cadbury Schweppes Ltd.

R. P. S. Bache, Chairman and Managing Director, George Salter & Co. Ltd.

R. C. Booth, Director, Birmingham Chamber of Commerce and Industry.

S. R. Cresswell, Divisional Organiser, Amalgamated Engineering Union. District Secretary, Confederation of Shipbuilding and Engineering Unions, Chairman, T.U.C. Midland Regional Advisory Committee.

Professor J. B. Cullingsworth (Resigned April 1970), Director, Centre for Urban and Regional Studies, University of Birmingham.

J. R. T. Douglas, Joint Managing Director, R. M. Douglas Construction Ltd., Birmingham. Past-Chairman, Midlands Section, Federation of Civil Engineering Contractors.

Professor I. F. Gibson, Head of Department of Industrial Administration, University of Aston.

S. W. Gregory-Meakin, Regional Secretary, Confederation of British Industry, Midlands Region.

Alderman Sir Michael Higgs, Solicitor. Chairman, Worcestershire County Council. Chairman of the West Midlands Conference of Planning Authorities.

D. H. Johnson, Chairman. H. & R. Johnson Ltd. Immediate Past-President of the British Pottery Manufacturers' Federation.

R. J. Mortimer, Marketing Manager, The Standard Bank Ltd.

D. A. Perris (Resigned October 1970), Chairman, Birmingham Regional Hospital Board. Secretary, Birmingham Trades Council. Secretary, T.U.C. Midland Regional Advisory Committee.

G. W. Rose, Director of Facilities Planning, British Leyland (Austin-Morris) Ltd.

R. P. Stedeford, Director, Tube Investments Ltd.

N. Tate, Policy Co-ordinator to the President, Confederation of British Industry.

C. H. Urwin (Resigned March 1970), Assistant General Secretary, Transport and General Workers' Union.

I. J. Wallace, Director, Charles Martin Associates Ltd. Immediate Past-Chairman, C.B.I. Midland Regional Council.

J. H. Kenneth Thomas, Secretary, West Midlands Economic Planning Council.

APPENDIX III

LIST OF ASSOCIATIONS AND FIRMS CONTACTED

The Working Party would like to express their appreciation of the assistance received from associations and firms, both within and outside the Region. Those principally concerned were

Alfred Herbert Ltd.
Birmingham Chamber of Commerce & Industry
Birmingham Chamber of Trade
Birmingham Regional Hospital Board
The Bow Group
Britannic Assurance Company Ltd.
The British Electrical & Allied Manufacturers' Association Ltd.
British Independent Steel Producers Association
British Industrial Plastics Ltd
British Mechanical Engineering Confederation Ltd
The British Plastics Federation
British Pottery Manufacturers' Federation
British Road Federation Ltd.
Chemical Industries Association Ltd.
Chubb & Sons Lock & Safe Co. Ltd.
Concrete (Midlands) Ltd.
Conder (Midlands) Ltd.
Confederation of British Industry
Courtaulds Ltd.
Cutler & Co.
The Dunlop Co. Ltd.
Economic Development Committee for Distributive Trades
Economic Development Committee for Food Manufacturing
Economic Development Committee for Hotel & Catering
Engineering Industries Association
Guest Keen & Nettlefolds Ltd.
Harry W. Weedon & Partners
Imperial Metal Industries (Kynoch) Ltd.
Joseph Lucas Ltd.
Kidderminster District Carpet Manufacturers' & Spinners' Association
Midland Association of Building Societies
Midland Bank Ltd.
National Farmers' Union (Herefords., Salop., Staffs., Warwicks. and Worcs. Branches)
National Westminster Bank Ltd.
P. A. Management Consultants Ltd.
Price Waterhouse & Co.
Road Haulage Association Ltd.
The Rom River Co. Ltd.
Rubery Owen & Co. Ltd.
The Sand & Gravel Association of Great Britain (Midland Gravel Co. Ltd.)
Seddon (Stoke) Ltd.
Tarmac Derby Ltd.
University of Aston in Birmingham
University of Birmingham
Water Resources Board
Wilkinson, Riddell & Larkins Ltd.

APPENDIX IV

EMPLOYEES IN EMPLOYMENT IN THE WEST MIDLANDS IN 1969 BY S.I.C. AND M.L.H.[1] WITH LOCATION QUOTIENTS[2] AND PERCENTAGE OF TOTAL REGIONAL EMPLOYMENT (1958 S.I.C.)

S.I.C.	M.L.H.	TITLE	Employees in Employment	% of Regional Employment	L.Q.
	001	Agriculture and Horticulture	27,700	1·2	0·8
I	Total	*Agriculture, forestry and fishing*	28,200	1·2	0·7
	101	Coal Mining	27,800	1·2	0·7
	102	Stone and slate quarrying and mining	1,700	0·1	0·8
	103	Chalk, clay, sand and graval extraction	2,200	0·1	0·9
II	Total	*Mining and quarrying*	32,000	1·4	0·7
	212	Bread, flour, confectionery	18,700	0·8	1·2
	213	Biscuits	1,600	0·1	0·3
	214	Bacon curing, meat and fish products	7,500	0·3	0·8
	215	Milk products	2,600	0·1	0·7
	217	Cocoa, chocolate and sugar confectionery	14,900	0·7	1·7
	218	Fruit and vegetabla products	4,200	0·2	0·6
	229	Food Industries n.e.s.	2,200	0·1	0·4
	231	Brewing and malting	11,600	0·5	1·3
	239	Other drink industries	4,400	0·2	0·7
III	Total	*Food, drink and tobacco*	69,800	3·1	0·8
	271	Chemicals and dyes	9,400	0·4	0·4
	273	Explosives and fireworks	4,000	0·2	1·8
	274	Paint and printing ink	3,400	0·1	0·8
	276	Synthetic resins, etc.	5,200	0·2	1·2
	277	Polishes, gelatine, etc.	1,200	0·1	0·7
IV	Total	*Chemicals and allied industries*	26,300	1·2	0·5
	311	Iron and steel	27,300	1·2	1·1
	312	Steel tubes	24,300	1·2	4·6
	313	Iron castings, etc.	34,600	1·5	3·2
	321	Light metals	21,800	1·0	3·7
	322	Copper, brass and other base metals	36,200	1·6	4·2
V	Total	*Metal manufacture*	144,300	6·4	2·5
	331	Agricultural machinary (except tractors)	4,400	0·2	1·3
	332	Metal-working machine tools	29,800	1·3	3·1
	333	Engineers' small tools and gauges	15,000	0·7	2·2
	334	Industrial engines	9,900	0·4	2·4
	335	Textile machinery, etc.	1,800	0·1	0·4
	336	Contractors' plant, etc.	2,900	0·1	0·7
	337	Mechanical handling equipment	6,300	0·3	1·0
	338	Office machinery	2,600	0·1	0·5
	339	Other machinery	30,700	1·4	0·8
	341	Industrial plant and steal work	27,900	1·2	1·5
	342	Ordnance and small arms	1,600	0·1	0·8
	349	Other mechanical engineering n.e.s.	42,000	1·8	1·6
	351	Scientific, surgical, photographic instruments etc.	4,200	0·2	0·3
	361	Electrical machinery	41,500	1·8	2·1
	362	Insulated wires and cables	4,700	0·2	0·9
	363	Telegraph and telephone apparatus	17,500	0·8	2·0
	364	Radio and other electronic apparatus	16,200	0·7	0·4
	365	Domestic electric appliances	7,200	0·3	1·2
	369	Other electrical goods	39,300	1·7	2·5
VI	Total	*Engineering and electrical goods*	305,900	13·5	1·3
VII	370	*Shipbuilding and marine engineering*	1,300	0·1	0·1

APPENDIX IV Cont.

S.I.C.	M.L.H.	TITLE	Employees in Employment	% of Regional Employment	L.Q.
	381	Motor vehicle manufacturing	163,600	7·2	3·2
	382	Motor cycle, three-wheel vehicle and pedal cycle manufacturing	13,800	0·6	5·7
	383	Aircraft manufacturing and repairing	22,100	1·0	0·9
	385	Railway carriages and wagons and trams	2,500	0·1	0·8
	389	Perambulators, hand-trucks, etc.	1,500	0·1	3·0
VIII	Total	*Vehicles*	203,900	9·0	2·5
	391	Tools and implements	6,100	0·3	2·7
	393	Bolts, nuts, screws, rivets, etc.	27,400	1·2	8·3
	394	Wire and wire manufactures	6,200	0·3	1·4
	395	Cans and metal boxes	2,300	0·1	0·7
	396	Jewellery, plate and refining of precious metals	8,000	0·4	3·2
	399	Metal industries, n.e.s.	158,700	7·0	4·0
IX	Total	*Metal goods not elsewhere specified*	208,700	9·2	3·6
	411	Production of man-made fibres	7,300	0·3	1·6
	412	Spinning and doubling of cotton, flax and man-made fibres	2,700	0·1	0·3
	413	Weaving of cotton, linen and man-made fibres	2,300	0·1	0·3
	414	Woollen and worsted	1,000	—	0·1
	417	Hosiery and other knitted goods	3,700	0·2	0·3
	419	Carpets	12,800	0·6	2·8
	421	Narrow fabrics	3,600	0·2	1·7
	422	Made-up textiles	1,800	0·1	0·8
	423	Textile finishing	1,600	0·1	0·2
X	Total	*Textiles*	38,000	1·7	0·5
	431	Leather (tanning and dressing) etc.	1,000	—	0·4
	432	Leather goods	4,800	0·2	2·0
XI	Total	*Leather, leather goods and fur*	5,800	0·3	1·0
	442	Men's and boy's outerwear	6,800	0·3	0·6
	444	Overalls and men's shirts, underwear, etc.	1,300	0·1	0·3
	445	Dresses, lingerie, infants' wear, etc.	5,200	0·2	0·4
	449	Dress industries n.e.s.	2,900	0·1	0·8
	450	Footwear	4,900	0·2	0·5
XII	Total	*Clothing and footwear*	22,700	1·0	0·5
	461	Bricks, fireclay and refractory goods	9,500	0·4	1·5
	462	Pottery	48,400	2·1	8·0
	463	Glass	8,500	0·4	1·0
	464	Cement	1,900	0·1	1·0
	469	Abrasives and building materials, etc. n.e.s.	11,800	0·5	0·9
XIII	Total	*Bricks, pottery, glass, cement, etc.*	80,000	3·5	2·3
	471	Timber	8,200	0·4	0·7
	472	Furniture	6,300	0·3	0·7
	473	Bedding, etc.	1,200	0·1	0·6
	474	Shopfitting, etc.	3,600	0·2	1·0
	475	Wooden containers, etc.	2,400	0·1	1·0
	479	Miscellaneous wood and cork manufacturers	1,500	0·1	0·7
XIV	Total	*Timber, furniture, etc.*	23,300	1·0	0·8
	481	Paper and board	2,700	0·1	0·3
	482	Cardboard boxes, etc	4,600	0·2	0·7
	483	Manufactures of paper and board n.e.s.	3,500	0·2	0·5
	486	Printing, publishing of newspapers and periodicals	7,000	0·3	0·5
	489	Other printing, publishing, bookbinding, engraving, etc.	15,200	0·7	0·6
XV	Total	*Paper, printing and publishing*	33,000	0·5	1·5

APPENDIX IV Cont.

S.I.C.	M.L.H.	TITLE	Employees in Employment	% of Regional Employment	L.Q.
	491	Rubber	33,200	1·5	2·5
	493	Brushes and brooms	1,300	0·1	1·1
	494	Toys, games, etc.	3,200	0·1	0·7
	496	Plastics moulding and fabricating	10,200	0·5	0·9
	499	Miscellaneous manufacturing industries	1,900	0·1	0·4
XVI	Total	*Other manufacturing industries*	50,200	2·2	2·0
XVII	500	*Construction*	128,600	5·7	0·9
	601	Gas	10,200	0·5	0·8
	602	Electricity	20,700	0·9	0·9
	603	Water	4,100	0·2	0·9
XVIII	Total	*Gas, electricity and water*	35,000	1·5	0·9
	701	Railways	15,600	0·7	0·6
	702	Road passenger transport	19,600	0·9	0·8
	703	Road haulage contracting	24,700	1·1	1·0
	706	Air transport	1,300	0·1	0·2
	707	Postal services, etc.	36,500	1·6	0·8
	709	Miscellaneous transport services	4,000	0·2	0·5
XIX	Total	*Transport and communication*	102,200	4·5	0·7
	810	Wholesale distribution	41,700	1·8	0·8
	820	Retail distribution	139,300	6·1	0·7
	831	Dealing in coal, builders' materials, etc.	9,600	0·4	0·8
	832	Dealing in other industrial materials and me-machinery	15,600	0·7	1·2
XX	Total	*Distributive trades*	206,200	9·1	0·8
XXI	860	*Insurance, banking and finance*	39,500	1·7	0·6
	871	Accountancy services	7,000	0·3	0·7
	872	Educational services	131,300	5·8	1·0
	873	Legal services	8,000	0·4	0·7
	874	Medical and dental services	78,100	3·4	0·8
	879	Other professional services, etc.	12,200	0·5	0·6
XXII	Total	*Professional and scientific services*	237,500	10·5	0·9
	881	Cinemas, theatres, radio, etc.	5,200	0·2	0·4
	882	Sport and other recreation	4,900	0·2	0·7
	883	Betting	2,800	0·1	0·5
	884	Catering, hotels, etc.	41,400	1·8	0·7
	885	Laundries	6,600	0·3	0·8
	886	Dry cleaning, etc.	2,600	0·1	0·7
	887	Motor repairs, etc.	38,700	1·7	0·9
	889	Hairdressing, etc.	7,600	0·3	0·8
	891	Private domestic services	8,800	0·4	0·4
	899	Other services	32,000	1·4	0·7
XXIII	Total	*Miscellaneous services*	151,400	6·7	0·7
	901	National government service	31,100	1·4	0·5
	906	Local government service	65,900	2·9	0·8
XXIV	Total	*Public administration and defence*	97,000	4·3	0·7
	TOTAL		2,271,000	1·0	100·0

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[1] M.L.H. with under 1000 employees have been omitted.

[2] The Location Quotient is the ratio between the proportion of the region's total work-force employed in a particular industry and the proportion of the work-force of Great Britain employed in that industry. It indicates the degree of concentration of the industry in the region relative to the whole country. A location quotient of 1 indicates an average concentration in the region compared to Great Britain. A location quotient greater than 1 indicates a higher, and less than 1 a lower concentration than average.

APPENDIX V

EMPLOYEES IN EMPLOYMENT IN THE WEST MIDLANDS IN 1969(b) AND 1970 BY S.I.C. AND M.L.H.[1] WITH LOCATION QUOTIENTS[2] AND PERCENTAGE OF TOTAL REGIONAL EMPLOYMENT (1968 S.I.C.)[3]

M.L.H.	TITLE	Employees in Employment		% of Regional Employment 1970 Employment	L.Q. 1970
		1969 (b)	1970		
001	Agriculture and horticulture	27,600	26,200	1·2	0·8
	I *Agriculture, forestry, fishing*	28,100	28,800	1·2	0·7
101	Coal mining	28,000	27,600	1·2	0·8
102	Stone and slate quarrying and mining	1,700	1,900	0·1	0·9
103	Chalk, clay, sand and gravel extraction	2,200	1,800	0·1	0·7
	II *Mining and quarrying*	32,200	31,400	1·4	0·8
212	Bread and flour confectionery	19,100	18,600	0·8	1·2
213	Biscuits	1,600	1,400	0·1	0·3
214	Bacon curing, meat and fish products	8,100	8,900	0·4	0·8
215	Milk and milk products	4,700	7,200	0·3	1·2
217	Cocoa, chocolate and sugar confectionery	14,900	13,000	0·6	1·5
218	Fruit and vegetable products	4,200	4,000	0·2	0·5
219	Animal and poultry foods	1,000	1,400	0·1	0·4
229	Food industries not elsewhere specified	2,500	2,300	0·1	0·5
231	Brewing and malting	11,500	11,600	0·5	1·3
232	Soft drinks	2,400	2,600	0·1	0·8
239	Other drink industries	1,800	1,700	0·1	0·5
	III *Food, drink and tobacco*	73,600	74,300	3·3	0·9
263	Lubricating oils and greases	1,000	1,000	—	1·1
	IV *Coal and petroleum products*	1,700	1,800	0·1	0·3
271	General chemicals	7,600	7,600	0·3	0·5
274	Paint	2,700	2,500	0·1	0·7
276	Synthetic resins and plastics materials and synthetic rubber	4,700	4,900	0·2	0·8
277	Dyestuffs and pigments	1,200	1,100	—	0·4
279	Other chemical industries	6,500	6,300	0·3	0·8
	V *Chemicals and allied industries*	23,500	23,100	1·0	0·5
311	Iron and steel (general)	27,300	27,100	1·2	1·0
312	Steel tubes	23,800	22,800	1·0	4·4
313	Iron castings, etc.	34,900	36,600	1·6	3·2
321	Aluminium and aluminium alloys	21,300	21,500	1·0	3·8
322	Copper, brass and other copper alloys	31,200	30,400	1·3	5·3
323	Other base metals	7,000	7,700	0·3	2·3
	VI *Metal manufacture*	145,400	146,100	6·5	2·5
331	Agricultural machinery (except tractors)	4,200	4,500	0·2	1·4
332	Metal-working machine tools	30,400	30,000	1·3	3·0
333	Pumps, valves and compressors	8,000	8,600	0·4	1·1
334	Industrial engines	6,400	6,000	0·3	1·9
335	Textile machinery and accessories	1,700	1,700	0·1	0·4
336	Construction and earth-moving equipment	3,400	3,600	0·2	0·8
338	Office machinery	2,600	2,900	0·1	0·6
339	Other machinery	22,900	23,100	1·0	0·8
341	Industrial (including process) plant and steelwork	28,300	27,800	1·2	1·5
342	Ordnance and small arms	4,100	4,600	0·2	2·1
349	Other mechanical engineering not elsewhere specified	39,500	38,500	1·7	1·5
	VII *Mechanical engineering*	159,000	159,000	7·1	1·3

APPENDIX V Cont.

M.L.H.	TITLE	Employees in Employment		% of Regional Employment 1970 Employment	L.Q. 1970
		1969 (b)	1970		
353	Surgical instruments and appliances	1,500	1,900	0·1	0·6
354	Scientific and industrial instruments and systems	3,600	4,200	0·2	0·4
	VIII *Instrument engineering*	6,200	6,700	0·3	0·4
361	Electrical machinery	43,800	40,100	1·8	2·2
362	Insulated wires and cables	4,700	3,900	0·2	0·7
363	Telegraph and telephone apparatus and equipment	17,300	18,800	0·8	2·0
364	Radio and electronic components	4,000	1,800	0·1	0·1
365	Broadcast receiving and sound reproducing equipment	5,700	6,000	0·3	1·0
366	Electronic components	4,000	4,100	0·2	0·7
367	Radio, radar and electronic capital goods	1,400	1,000	—	0·1
368	Electric appliances primarily for domestic use	7,100	7,400	0·3	1·2
369	Other electrical goods	39,300	36,700	1·6	2·4
	IX *Electrical engineering*	127,200	119,700	5·3	1·3
	X *Shipbuilding and marine engineering*	1,300	1,300	0·1	0·1
380	Wheeled tractor manufacturing	7,300	7,900	0·3	3·4
381	Motor vehicle manufacturing	183,800	169,400	7·5	3·3
382	Motor cycle, tricycle and pedal cycle manufacturing	11,700	10,400	0·5	5·3
383	Aerospace equipment manufacturing and repairing	22,500	23,100	1·0	1·0
385	Railway carriages and wagons and trams	2,500	2,700	0·1	0·9
	XI *Vehicles*	208,000	213,900	9·5	2·6
390	Engineers' small tools and gauges	14,800	18,600	0·8	2·4
391	Hand tools and implements	6,000	5,900	0·3	2·8
392	Cutlery, spoons, forks and plated tableware, etc.	1,000	1,000	—	0·6
393	Bolts, nuts, screws, rivets, etc.	27,000	27,100	1·2	6·0
394	Wire and wire manufactures	8,100	5,700	0·3	1·3
395	Cans and metal boxes	2,200	1,800	0·1	0·5
396	Jewellery and precious metals	7,100	6,700	0·3	3·6
399	Metal industries not elsewhere specified	153,500	147,000	6·5	3·9
	XII *Metal goods not elsewhere specified*	217,600	213,900	9·5	3·3
411	Production of man-made fibres	7,300	6,900	0·3	1·5
412	Spinning and doubling on the cotton and flax systems	2,700	2,500	0·1	0·3
414	Woollen and worsted	1,000	1,600	0·1	1·1
417	Hosiery and other knitted goods	3,700	2,900	0·1	0·2
419	Carpets	12,800	12,200	0·5	2·8
421	Narrow fabrics (not more than 30 cm. wide)	3,600	3,000	0·1	1·5
422	Made-up textiles	1,900	2,200	0·1	0·9
423	Textile finishing	1,600	1,500	0·1	0·3
	XIII *Textiles*	36,000	34,200	1·5	0·5
431	Leather (tanning and dressing) and fellmongery	1,000	1,000	—	0·4
432	Leather goods	4,900	4,700	0·2	2·1
	XIV *Leather, leather goods and fur*	5,800	5,700	0·3	1·1
442	Men's and boy's tailored outerwear	6,800	6,100	0·3	0·6
444	Overalls and men's shirts, underwear, etc.	1,400	1,400	0·1	0·4
445	Dresses, lingerie, infants' wear, etc.	5,000	4,800	0·2	0·4
449	Dress industries not elsewhere specified	2,900	3,100	0·1	0·8
450	Footwear	5,000	4,400	0·2	0·5
	XV *Clothing and footwear*	22,700	21,400	0·9	0·4

M.L.H.	TITLE	Employees in Employment		% of Regional Employment 1970 Employment	L.Q. 1970
		1969 (b)	1970		
461	Bricks, fireclay and refractory goods	9,300	8,500	0·4	1·4
462	Pottery	48,400	47,900	2·1	8·0
463	Glass	8,500	8,000	0·4	1·0
464	Cement	1,900	1,700	0·1	1·0
469	Abrasives and building materials, etc. not elsewhere specified	11,800	11,600	0·5	1·0
	XVI *Bricks, pottery, glass, cement, etc.*	79,900	77,600	3·4	2·3
471	Timber	8,100	8,100	0·4	0·8
472	Furniture and upholstery	6,200	8,200	0·3	0·7
473	Bedding, etc.	1,300	1,300	0·1	0·6
474	Shop and office fitting	3,700	3,200	0·1	0·9
475	Wooden containers and baskets	2,400	2,300	0·1	1·0
479	Miscellaneous wood and cork manufactures	1,500	1,400	0·1	0·7
	XVII *Timber, furniture, etc.*	23,200	22,500	1·0	0·8
481	Paper and board	2,600	2,800	0·1	0·3
482	Packaging products of paper, board and associated materials	5,000	4,900	0·2	0·6
483	Manufactured stationery	3,200	3,100	0·1	1·0
485	Printing, publishing of newspapers	6,100	6,200	0·3	0·6
489	Other printing, publishing, bookbinding, engraving, etc.	15,300	15,500	0·7	0·6
	XVIII *Paper, printing and publishing*	33,100	33,400	1·5	0·5
491	Rubber	33,000	34,400	1·5	2·7
493	Brushes and brooms	1,300	1,300	0·1	1·1
494	Toys, games, children's carriages, and sports equipment	4,700	4,400	0·2	0·9
496	Plastics products not elsewhere specified	10,100	11,200	0·5	1·0
499	Miscellaneous manufacturing industries	2,000	2,000	0·1	0·6
	XIX *Other manufacturing industries*	51,600	53,800	2·4	1·5
500	XX *Construction*	128,900	113,900	5·0	0·9
801	Gas	10,300	10,100	0·4	0·8
602	Electricity	20,700	19,700	0·9	0·9
603	Water supply	4,100	4,200	0·2	1·0
	XXI *Gas, electricity and water*	35,100	34,100	1·5	0·9
701	Railways	15,600	15,300	0·7	0·6
702	Road passenger transport	19,700	20,500	0·9	0·9
703	Road haulage contracting for general hire or reward	23,500	23,500	1·0	1·0
704	Other road haulage	1,400	2,200	0·1	1·0
708	Postal services and telecommunications	36,700	39,400	1·7	0·8
709	Miscellaneous transport services and storage	4,200	4,500	0·2	0·5
	XXII *Transport and communication*	103,000	106,900	4·7	0·7
810	Wholesale distribution of food and drink	19,800	16,800	0·7	0·7
811	Wholesale distribution of petroleum products	1,600	2,000	0·1	0·6
812	Other wholesale distribution	20,900	21,100	0'9	0·9
820	Retail distribution of food and drink	61,100	52,600	2·3	0·7
821	Other retail distribution	80,700	89,000	3·9	0·8
831	Dealing in coal, oil, builders' materials, grain and agricultural supplies	9,600	8,800	0·4	0·7
832	Dealing in other industrial materials and machinery	15,600	15,900	0·7	1·2
	XXIII *Distributive trades*	209,200	206,200	9·1	0·8

APPENDIX V Cont.

M.L.H.	TITLE	Employees in Employment		% of Regional Employment 1970 Employment	L.O. 1970
		1969 (b)	1970		
860	Insurance	18,700	17,600	0·8	0·6
861	Banking and bill discounting	13,400	13,800	0·6	0·5
862	Other financial institutions	4,600	4,900	0·2	0·6
863	Property owning and managing, etc.	2,800	3,400	0·2	0·5
865	Other business services	9,200	9,900	0·4	0·6
866	Central office not allocable elsewhere	2,500	3,000	0·1	0·6
	XXIV *Insurance, banking, finance and business services*	51,800	53,600	2·4	0·6
871	Accountancy services	7,000	7,100	0·3	0·8
872	Educational services	131,800	136,400	6·0	1·0
873	Legal services	8,000	7,700	0·3	0·7
874	Medical and dental services	78,300	79,700	3·5	0·8
876	Research and development services	3,100	3,100	0·1	0·4
879	Other professional and scientific services	9,800	10,000	0·4	0·8
	XXV *Professional and scientific services*	238,800	244,900	10·8	0·9
881	Cinemas, theatres, radio, etc.	5,200	5,500	0·2	0·6
882	Sport and other recreations	4,800	5,100	0·2	0·8
883	Betting and gambling	3,100	3,000	0·1	0·5
884	Hotels and other residential establishments	17,100	14,600	0·6	0·5
885	Restaurants, cafes, snack bars	6,200	6,900	0·3	0·6
886	Public houses	8,500	9,500	0·4	1·2
887	Clubs	2,900	3,500	0·2	0·7
888	Catering contractors	6,500	6,400	0·3	1·3
889	Hairdressing and manicure	7,500	7,300	0·3	0·8
891	Private domestic service	7,200	5,800	0·3	0·6
892	Laundries	6,700	6,100	0·3	0·7
893	Dry cleaning, job dyeing, carpet beating, etc.	2,600	2,800	0·1	1·0
894	Motor repairers, distributors, garages, and filling stations	38,100	37,100	1·6	0·9
899	Other services	21,000	20,400	0·9	0·7
	XXVI *Miscellaneous services*	138,100	134,300	5·9	0·7
901	National government service	30,800	31,600	1·4	0·6
906	Local government service	65,900	66,200	2·9	0·8
	XXVII *Public administration and defence*	96,600	97,900	4·3	0·7
	WEST MIDLAND TOTAL 1970			2259·0	

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[1] M.L.H. with less than 1000 employees in employment in 1970 are omitted.

[2] For definition of 'Location Quotient' see Appendix IV.

[3] These figures are based on the revised 1968 edition of the Standard Industrial Classification (SIC). They are not directly comparable with figures used in the text marked 1969(a) or with those for earlier years which are based on the 1958 edition.

APPENDIX VI

RELATIONSHIPS BETWEEN RECENT MALE EMPLOYMENT AND UNEMPLOYMENT TRENDS IN THE WEST MIDLANDS

1 Much of the Appraisal is concerned with regional labour demand as measured by employment totals and changes. Less attention has been given to the labour supply position, not only in this Appraisal but also in previous studies of the West Midlands economy. An excess of labour supply; that is to say high unemployment rates, has not been a persistent feature of the West Midlands economy since the war. However, since 1966, the West Midlands has not been able to avoid rising unemployment associated with the downturn in the national economy. This is illustrated in Figs. 9 and 10 of the Report.

2 This Appendix considers the absolute and relative deterioration in unemployment in the West Midlands in the context both of recent national changes and the longer term West Midlands experience since 1954. Consideration is limited to an examination of the relationship between registered male unemployment[1], the most significant indicator of unused labour resources, and male employment. We are not, therefore, constructing a detailed model of the behaviour of the West Midlands labour market[2] and this analysis must be seen only as illustrating recent male labour demand and supply trends in the broadest way.

3 As is stated in paragraph 3.15 of the Report, the unemployment rate in the Region has varied between one-half and four-fifths of the Great Britain rate, depending on the position of the national employment cycle. The numbers of unemployed in the Region have not varied greatly, with perhaps the largest changes occurring rapidly after the initial downturn or upturn movements of the national aggregate demand. In the early 1960's the West Midlands had an unemployment rate noticeably lower than for Great Britain and this favourable position has continued since 1966. However, the increase in the Region's male unemployment has been proportionately greater than nationally. This was not the experience of the previous two economic downturns examined below but it is too soon to say whether this is a temporary or permanent shift in the West Midlands position vis-à-vis Great Britain.

4 Numerical changes in male registered unemployment, and in male employment adjusted for natural increase in labour supply are shown in Table A for the trough positions of the last three economic downturns[3]. West Midlands changes are expressed as percentages of national changes, which are given for comparison.

5 In the most recent downturn the table shows that the West Midlands, with 10% of male national employment and an average 7% of male national unemployment, has had considerably higher proportions of national changes in both male employment (15%), and male unemployment (12%). This is a markedly less favourable performance than in the previous two downturns. If the West Midlands 1961-63 share of the national employment fall had occurred again in 1966-68, the fall in male employment in the West Midlands would have been 45,000 less than actually occurred. Even if the higher 1956-58 share had applied in 1966-68 the fall in male employment would still have been 15,000 less. Considering unemployment, if earlier experience had been repeated unemployment would have risen some 7–9,000 less than it actually did. An initial conclusion would be that in the recent downturn the West Midlands performance was roughly 15–45,000 worse in terms of male employment and 7–9,000 worse in terms of male unemployment than in previous broadly comparable periods. However, this general conclusion must be tentative; it need not necessarily indicate a persistent worsening in the West Midlands relative performance.

6 We can widen the comparison, using simple regression techniques, by considering the relationships between West Midlands and Great Britain annual changes in male employment and unemployment. The analysis covers the 1954-66 period, thus including both up and downswings in the economic cycle. The following equations were obtained

(1) $\Delta U_{WM} = 0{\cdot}0914\ \Delta U_{GB} - 0{\cdot}4$ ($R^2 = 0{\cdot}778$, sig. at 0·1%)

(2) $\Delta E_{WM} = 0{\cdot}134\ \Delta E_{GB} + 7{\cdot}4$ ($R^2 = 0{\cdot}549$, sig. at 1%)

These equations show a broad, but not perfect relationship between national and West Midlands changes in the two variables. On average the West Midlands contributes about 9% of national unemployment changes and 13% of national employment changes. We can compare this with Table A result for 1966-68, where

TABLE A Changes in national and West Midlands male unemployment and employment

Year	(ΔE–ΔS) W.M.	(ΔE–ΔS) G.B.	W.M. as % of G.B.	ΔU W.M.	ΔU G.B.	W.M. as % of G.B.
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1956–58	−24	−196	12·2	+11	+140	7·8
1961–63	−14	−218	6·4	+14	+161	8·7
1966–68	−77	−506	15·2	+27	+229	11·8

Note Cols. 2, 3, 5 and 6 in thousands

the changes were respectively 12% and 15%.

7 This broader comparison confirms the conclusions drawn from Table A that the post-1966 downturn in the employment cycle has had an unusually heavy affect on the West Midlands. There are two aspects to this conclusion. Firstly, what are the underlying causes of unfavourable employment performance? This is briefly considered in Appendix VII, dealing with the employment analysis. Secondly, has the response of unemployment to employment change been disproportionately severe, indicating a higher than usual propensity for employment falls to produce unemployment? It can be observed from Table A that just under one-third of the worsening employment position has appeared as unemployment (7–9,000 compared to 15–45,000); is this proportionately higher than in previous cycles?

8 Again, using simple regression techniques, the relationship between unemployment changes (ΔU) and adjusted employment changes ($\Delta E - \Delta S$) are examined for the Region. The background to this analysis is given by Charts 1 and 2. The first chart shows the values of the three variables ΔU, ΔE and ΔS for the West Midlands for the period 1954-69. The cyclical pattern of ΔU and ΔE contrasts with the steadily increasing values of ΔS up to the peak year of adult population growth (1963), and its subsequent decline to a 'no change' labour supply position. It should be noted that Chart 1 does not show the usual employment cycle, where absolute values are plotted, but gives 'first differences' (i.e. changes). For instance, Chart 1 shows that since 1966, unemployment has been rising (i.e. ΔU positive), but at a decreasing rate since 1967 (i.e. the ΔU line falling).

9 Chart 2 is a scatter diagram showing values of ΔU and the adjusted employment variable ($\Delta E - \Delta S$) for the Region in the period 1954-69. A broad relationship between ΔU and ($\Delta E - \Delta S$) is apparent. However, the observations do not fall on a perfect straight line, indicating that other factors not considered here must be operating.[2] This is confirmed by regression analysis; the following equation is obtained.

(3) $\Delta U_{WM} = -0{\cdot}28\ (\Delta E - \Delta S)_{WM} + 2.\ (R^2 = {\cdot}587,$ sig. at 0·1% level)

10 This shows that 59% of the variation in unemployment is explained by changes in 'adjusted' employment and that on average, 28% of an employment change appears as an immediate and opposite change in unemployment. This result can be compared to a similar equation for Great Britain.

(4) $\Delta U_{GB} = -0{\cdot}48\ (\Delta E - \Delta S)_{GB} - 3.\ (R^2 = {\cdot}725,$ sig. at 0·1% level).

Both the 'degree of explanation' (72%) and the immediate 'impact' of employment changes on unemployment (48%) are higher nationally than for the West Midlands. It appears that the West Midlands has absorbed employment changes with less impact on unemployment than in the country as a whole.

11 The 28% 'impect' for the West Midlands indicates that the 1966-68 experience is consistent with the longer period 1954-69 results. However, the post 1966 experience is included in the data used in equation (3) and the magnitude of the changes in ΔU and ΔE since 1966, (see Chart 1), may have had a disproportionate effect on the results of the equation. This might disguise significant differences on the unemployment 'impact' within the 1954-69 period. To test this, the period is divided into three sub-periods, 1954-59, 1959-63 and 1963-69. The results obtained are as follows:

		U*
(5) 1954-59	$\Delta U_{WM} = -0{\cdot}15\ (\Delta E - \Delta S)_{WM} + 3{\cdot}0\ (R^2 = 0{\cdot}58)$	0·8
(6) 1959-63	$\Delta U_{WM} = -0{\cdot}29\ (\Delta E - \Delta S)_{WM} + 3{\cdot}0\ (R^2 = 0{\cdot}69)$	1·1
(7) 1963-69	$\Delta U_{WM} = -0{\cdot}34\ (\Delta E - \Delta S)_{WM} - 1{\cdot}0\ (R^2 = 0{\cdot}69)$	1·5

*Average % rate of male unemployment in the West Midlands.

12 Because of the small numbers of observations contained within each regression none is statistically significant. However, there is evidence of a broad relationship between the proportion of employment change appearing as unemployment, (the unemployment 'impact') and the average unemployment rate in each period shown alongside each equation. The 1963-69 'impact' of 34% is consistent with the unemployment-employment relationship of just under one third established by the 'downswing' comparison in paragraph 7.

Conclusions

13 Although it is difficult to draw conclusions about the future from any short period in the past, it is clear from several of the tests described in this section that the following two points can be made about the West Midlands' post 1966 experience.

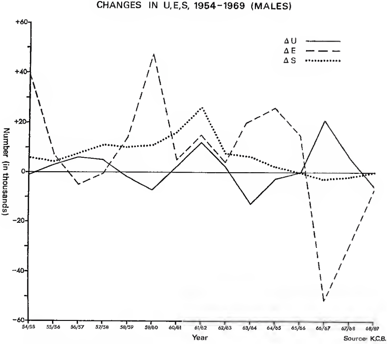
- i The fall in male employment since 1966 has been greater than in previous broadly similar periods.
- ii The effect of this on male unemployment has been greater than in previous downswings; the 'impact' of the employment change on unemployment seems to be about one-third since 1966, compared to one-fifth to one-quarter in the 1950's and early 1960's.

14 We examine some reasons for this greater than average employment fall in Appendix VII and we can only speculate on the causes for the high unemployment impact. One explanation is that the recent exceptionally large fall in the demand for labour has pushed the West Midlands past a 'threshold' never experienced for any length of time before. This has led to a position of considerable labour surplus where the adjustment of migration and activity rates is insufficient to prevent significant increases in male registered unemployment. This could be called a 'demand led' process. An alternative explanation, which may be more consistent with unfilled vacancy, activity rate and migration evidence, is that a change in employers' attitudes to labour utilisation has occurred due to this long and continuing (into 1971) period of low growth. In the past a characteristic of the Region appears to have been the acceptance by employers of under-employment of labour during short recessions in order to meet the difficulties of severe labour shortages in the rapidly following periods of expansion. A labour shake-out may have occurred with low productivity male workers (*eg* the elderly, unskilled and some white collar workers) being made redundant and persisting as registered unemployed even though the demand for some categories of specialist labour has remained high. This pattern is broadly confirmed in Paragraph 3.18 of the Report. The two explanations have different implications for the future. If the high unemployment impact since 1966 has been due merely to an aggregate short fall of employment, a national economic recovery should result in a much improved West Midlands

West Midlands

Chart 1

CHANGES IN U,E,S, 1954-1969 (MALES)

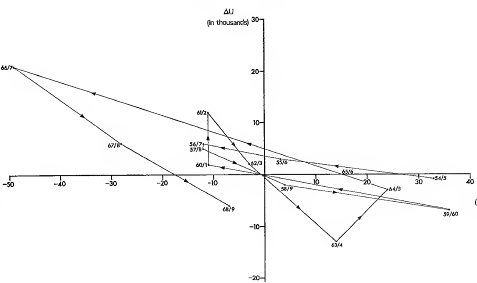


See paragraph 8

Source: K.C.B. & C.E.S. WMEPB

Chart 2

West Midlands
MALES 1954-69



See paragraph 9

Source K.C.B. & C.E.S. W M E P B

unemployment position. However, if a change in employers' manning attitude has taken place, and if this change persists, the additional demand for labour may not have a significant effect on regional unemployment. Additional labour could be drawn from increased immigration from other areas and from rising activity rates leaving a persistent 'residue' of additional registered unemployed. This could mean that the Region's relative unemployment position may not return to the very low levels of the early 1960's.

Notes

1. As noted in Paragraph 3.16 of the Report, the percentage of males who register as unemployed is more than that of females, and hence the male wholly unemployed figures are a much more reliable guide.
2. The construction of a comprehensive model of regional labour market behaviour is beyond the scope of the Economic Appraisal. Such a model would have to allow for the complex inter-action of labour supply and demand at the aggregate level (unemployment, activity rates, migration and employment), and the sectoral level (industrial trends, mobility of industry, occupational trends, etc).
3. The three variables used in this appendix are annual changes in:
   - i the numbers of registered wholly unemployed males (ΔU);
   - ii the numbers of male employees in employment, representing labour demand (ΔE);
   - iii the numbers of an (approximate) measure of male 'natural increase' labour supply (ΔS).
     The third variable ΔS is defined as changes in male population aged 15 to 64 adjusted for changes in numbers in further education and the armed forces. It cannot be calculated directly for the W.M.R. since the data are not available. The figures for the Region are 'scaled-down' from the national estimates on a proportionate basis derived from the Region's share of national population. It therefore does *not* include inter-regional migration.
4. For simplicity of presentation, the employment and labour supply variables are combined to produce an indicator of employment changes adjusted for natural increases in labour supply. This variable is called ($\Delta E - \Delta S$).

APPENDIX VII

A STATISTICAL ANALYSIS OF EMPLOYMENT CHANGES 1961–1966: 1966–1969

1 This analysis attempts to throw some light on the underlying strengths and weaknesses of the Region's economy, as indicated by recent changes in employment.[1] It does not probe deeply into the underlying causes of the changes observed, which are the results of the interaction of a complex set of economic variables;[2] employment changes are symptomatic of these underlying economic forces. Regional analysis inevitably tends to concentrate on employment because of the availability of comprehensive data.

2 Employment is first examined in terms of numerical changes by broad industrial sectors, with the industries of particular significance to the regional economy being noted; a broad comparison is made between West Midlands and national employment changes. More detailed analysis separates past variations between regional and national rates of employment change into two components. First, an allowance is made for the employment effects of the West Midlands particular industrial structure and second, the effects of differences between regional and national rates of change of industrial employment are identified. The method used is a modified version of the components of change or shift and share technique and is explained in note 3. Its basic characteristic is the division of employment change into three components, of which two, the structural and differential component, are of significance to regional analysis. The structural and differential components sum to the Region's total employment change relative to Great Britain, and the technique allows the contribution of individual industries to be identified.

3 Two periods have been chosen for comparison; the first, 1961-66, reflects a generally prosperous period of low unemployment, high activity rates and fast employment growth.[4] This has been compared with the 1966-69 experience in order both to identify the absolute differences in employment change between the two periods, and to distinguish between the cyclical and regional 'relative' constituents of these differences. Sub-regional employment changes have not been analysed; any conclusions drawn for the Region as a whole are unlikely to apply uniformly to individual sub-regions, where the economic variables already mentioned may apply in differing degrees. Tables A and B show numerical changes in employment for the two periods, broken down into male and female employment in four main industrial groupings.

4 *Male employment* grew by almost 16,000 a year in the 1961-66 period, over half of this growth being in the service industries and almost another third in construction. The decline in the extractive sector was more than offset by growth in manufacturing. Since 1966, the employment fall has averaged 28,000 a year, so that in the three years since then all the male employment gain of the previous period has been eliminated. Since 1966 all four sectors have shown employment falls. Individual industries which make significant contributions

TABLE A Males: Change in Employees in Employment ('000)

Industry Groupings	Change		Average annual change	
	1961–66(a)	1966(b)–69	1961–86(a)	1966(b)–69
(1)	(2)	(3)	(4)	(5)
Extractive	−21·9	−14·8	−4·4	−4·9
Manufacturing	+31·4	−30·2	+6·3	−10·1
Construction	+26·0	−15·6	+5·2	−5·2
Services	+44·1	−24·7	+8·8	−8·2
Total	+79·6	−85·3	+15·9	−28·4

TABLE B Females: Change in Employees in Employment ('000)

Industry Groupings	Change		Average annual change	
	1961–86(a)	1966(b)–69	1981–66(a)	1966(b)–69
(1)	(2)	(3)	(4)	(5)
Extractive	−1·6	−0·6	−0·3	−0·2
Manufacturing	+0·5	−23·0	+0·1	−7·7
Construction	+2·5	+0·1	+0·5	–
Services	+63·2	+6·0	+12·6	+2·0
Total	+64·6	−17·5	+12·9	−5·8

TABLE C Males: Some significant industry movements (MLH) for 1961–66(a)

('000)

Negative			Positive		
MLH (1)	Title (2)	Nos. (3)	MLH (4)	Title (5)	Nos. (6)
001	Agriculture and horticulture	–10·0	381	Motor vehicles	+20·1
101	Coal-mining	11·8	399	Metal industries n.e.s.	+9·5
383	Aircraft mnf. and repairs	–10·1	500	Construction	+26·0
701	Railways	–9·8	702	Road passenger transport	+4·0
			707	Postal and telecommunications	+6·8
			862	Educational services	+7·6
			887	Motor repairers, etc.	+10·3
	Sub total	–41·7			+84·3
	Balance: net change in all other industries				+37·0
	TOTAL				+79·6

TABLE D Males: Some significant industry movements (MLH) for 1966(b)–69

('000)

Negative			Positive		
MLH (1)	Title (2)	Nos. (3)	MLH (4)	Title (5)	Nos. (6)
101	Coal mining	–11·5	872	Educational services	+3·8
361	Electrical machinery	–5·4			
399	Metal industries n.e.s.	–5·6			
500	Construction	–19·0			
702	Road passenger transport	–7·8			
820	Retail distribution	–10·0			
	Sub total	–59·3			+3·8
	Balance: net change in all other industries	–29·8			
	TOTAL	–85·3			

to male employment change in the two periods are shown in Tables C and D. The growth in the 1961-66 period of motor vehicles and construction should be noted. By contrast, in the period 1966-69 most industries showed employment falls; construction fell heavily, motor vehicles were stable and in fact only one industry showed a growth of more than 3,000.

5 *Female employment* grew by an average of 13,000 a year in the 1961-66 period (Table 8). This growth was almost entirely accounted for by the service sector; the other groups showed approximately stable employment. Since 1966, female employment has fallen but, in contrast to males, the gains of the previous period have not been entirely eliminated and in 1969 was some 47,000 higher than in 1961. Tables E and F show those industries where female employment showed significant growth or decline. It is worth noting that in the 1966-69 period some service industries, particularly education, showed continued strong growth, and female employment in services seemed to be the most resilient sector in the West Midlands.

Components of change analysis

6 Table G below gives average annual changes in total male and female employment in the West Midlands broken down into two parts. First, changes that would have occurred if total employment in the West Midlands had reflected national trends (Cols. 2 & 4) and second, the regional element of employment changes (Cols. 3 & 5).

7 This regional element shows by how much employment in the West Midlands has on average changed faster or slower then nationally. It can be seen that most of the changes in total employment shown in Tables A and 8 are a reflection of national trends. However, the favourable regional employment change evident in the earlier period disappeared after 1966. Therefore, besides a fall in employment which was a reflection of national developments, since 1966 the West Midlands has shown a less favourable relative employment trend then previously.

8 The components of change analysis seeks to provide a broad explanation for this deteriorating relative

performance. The basic question is how much was this deterioration due to declining structural advantage, and how much to less favourable regional industrial growth rates. The broad economic assumption of the technique is that unless special regional factors are operating, employment in each industry in a region would change at the national rate. This is an over-simplification; for instance, in a region where extractive and manufacturing industries showed better than national employment trends, the construction and service sectors would be expected to show faster than average growth through the operation of a favourable regional multiplier, even if their industrial structure was neutral or unfavourable. The technique cannot provide a comprehensive theory of regional employment change but serves as a useful standardisation technique based on a simple but not implausible set of economic assumptions.

Broad category analysis

9 Structural and differential components for *male employment* for the two periods are shown in Tables H and J (Cols. 3 & 4).

Table H illustrates that in the 1961-66 period industrial structure was the main contributor to faster than average growth; this effect was almost entirely in the manufacturing sector. However, in aggregate, this

TABLE E Females: Some significant industry movements (MLH) for 1961–66(a)

('000)

Negative			Positive		
MLH (1)	Title (2)	Nos. (3)	MLH (4)	Title (5)	Nos. (6)
361	Electrical machinery	−3·1	399	Metal industries n.e.s.	+4·9
891	Private domestic service	−3·2	820	Retail distribution	+9·6
			860	Insurance, banking, finance	+3·2
			872	Educational services	+18·9
			874	Medical and dental services	+13·0
			899	Other services	+8·9
	Sub total	−6·3			+58·4
	Balance: net change in all other industries				+12·5
	TOTAL				+64·6

TABLE F Females: Some significant industry movements (MLH) for 1966(b)–69

('000)

Negative			Positive		
MLH (1)	Title (2)	Nos. (3)	MLH (4)	Title (5)	Nos. (6)
399	Metal industries n.e.s.	−4·7	364	Radio and electronic app.	+3·4
462	Pottery	−3·2	872	Education	+12·8
820	Retail distribution	−9·2	874	Medical and dental services	+4·4
			899	Other services	+3·1
	Sub total	−17·1			+23·7
	Balance: net change in all other industries	−24·1			
	TOTAL	−17·5			

TABLE G Annual average change in employees in employment in the West Midlands

('000)

	1961–1966(a) Average		1966(b)–1969 Average	
(1)	National element (2)	Regional element (3)	National element (4)	Regional element (5)
Male	+6·2	+9·7	−21·6	−6·7
Female	+12·4	+0·5	−1·9	−3·9
TOTAL	+18·6	+10·2	−23·5	−10·7

TABLE H **Males: Component changes 1961–66(a). Summary table**

('000)

(1)	Nat. Comp. (2	Str. Comp. (3)	Diff. Comp. (4)	Cols. (3 + 4) (5)	Total Change 1961–66 (6)	E. in E. 1961 (7)
Primary	−28·1	+7·4	−1·2	+6·2	−21·9	89·9
Manufacturing	+16·4	+29·7	−14·7	+15·0	+31·4	841·8
Construction	+18·0	−2·7	+10·7	+8·0	+26·0	115·6
Services	+24·9	−0·1	+19·2	+19·2	+44·1	399·4
TOTAL	+31·2	+34·3	+14·1	+48·4	+79·8	1446·5

Note Industries have been analysed at the MLH level; in the summary tables the individual MLH's are aggregated into 4 broad categories.

sector showed an unfavourable differential change, indicating that overall manufacturing industries grew at slower than national rates. But, since the favourable structure outweighed the unfavourable differential, male manufacturing employment grew 15,000 faster than nationally. The manufacturing differential was amply offset by a significantly faster than national growth in construction and services. The service differential indicates that starting from a lower than average share of service employment and a structurally neutral position, the West Midlands showed a noticeable 'catching up' effect.

10 As indicated by the overall structural and differential components, the West Midlands performance since 1966 has deteriorated significantly in every sector. The structural advantage of manufacturing has reduced from approximately 6,000 a year to just over 1,000, while the unfavourable manufacturing differential has risen from about 3,000 to 5,000 a year; male manufacturing employment in the West Midlands fell considerably faster than nationally. In other sectors the situation in the extractive industries remains unchanged. The favourable differential in construction has almost completely disappeared. In services, although the structural component remains insignificant the differential component worsened from about +4,000 to −5,000 a year. Therefore, since 1966, employment in services also fell more rapidly than nationally. This general decline in both the structural and differential components is puzzling; some tentative explanations are set out in the conclusions at the end of this paper.

11 Tables K and L show the structural and differential components by broad groups for *female employment* (Cols 3 & 4). Between 1981 and 1966 the overall structural effect for female employment was broadly neutral, with a slightly favourable structure in manufacturing offset by an unfavourable structure in services. In this earlier period the differential components for female employment in manufacturing and services were similar to those for males, i.e., a negative differential in manufacturing and positive differential in services. The 1966-69 components (Table L) show a similar but less

TABLE J **Males: Component changes 1986(b)–1969. Summary table**

('000)

(1)	Nat. Comp. (2)	Str. Comp. (3)	Diff. Comp. (4)	Total (3 + 4) (5)	Total Change (6)	E. in E. 1966 (7)
Primary	−19·2	+4·4	0·0	+4·4	−14·8	67·5
Manufacturing	−19·5	+3·9	−14·6	−10·7	−30·2	878·6
Construction	−19·0	+1·7	+1·7	+3·4	−15·6	138·5
Services	−7·2	−2·6	−14·9	−17·6	−24·7	440·2
TOTAL	−64·9	+7·4	−27·8	−20·4	−85·3	1524·8

TABLE K **Females: Component changes 1961–66(a) Summary table**

('000)

Title (1)	Nat. Comp. (2)	Str. Comp. (3)	Diff. Comp. (4)	Total (3 + 4) (5)	Total Change (6)	E. in E. WMR 196 (7)
Primary	−1·6	+0·2	−0·2	0·0	−1·6	9·5
Manufacturing	+6·9	+2·8	−9·2	−6·4	+0·5	385·7
Construction	+1·8	−0·1	+0·8	+0·7	+2·5	6·8
Services	+54·9	−4·9	+13·2	+8·3	+63·2	381·9
TOTAL	+62·0	−2·0	+4·6	+2·6	+64·6	783·9

TABLE L Females: Component changes 1966(b)–69 Summary table

('000)

Title (1)	Nat. Comp. (2)	Str. Comp. (3)	Diff. Comp. (4)	Total (3 + 4) (5)	Total Change (6)	E. in E. WMR 1966 (7)
Primary	−0·9	+0·1	+0·2	+0·3	−0·6	8·0
Manufacturing	−13·8	−6·3	−2·9	−9·2	−23·0	388·8
Construction	−0·1	0·0	+0·2	+0·2	+0·1	9·0
Services	+8·9	0·0	−2·9	−2·9	+6·0	429·0
TOTAL	−5·9	−6·2	−5·4	−11·6	−17·5	834·8

startling deterioration in the West Midlands. In the manufacturing sector both the structural and differential components were unfavourable although the latter (averaging −1,000 a year) was less than in the previous period (about −2,000 a year). The most noticeable change is the elimination of the favourable services differential (−1,000 a year compared to +2,500 a year in 1961-66), indicating that as for males, the early 1960's 'catching up' effect ceased.

Trends in some significant West Midlands industries

Male structural component

12 Tables M and N show industries which contributed significantly to the West Midlands male structural effects in the two periods. Col. 4 of these tables show whether the structural components were due to over or under representation of industries in the Region, combined with slower or faster than average national rates of employment change. For instance, coal mining had a poor national performance, and its small share of West Midlands employment produced favourable structural effects. In the 1961-66 period, shipbuilding and parts of transport had favourable structural components for the same reason. The two most significant over-represented nationally expanding industries were the renowned sectors of motor vehicles and metal industries n.e.s. These accounted for over two-thirds of the

TABLE M Males: Some structurally significant industries 1961–66

MLH (1)	Title (2)	Str. Comp. (000's) (3)	Over or under-representation in WMR (4)
101	Coalmining	+3·9	−
370	Shipbuilding and marine engineering	+4·7	−
381	Motor vehicle manufacture	+17·1	+
399	Metal industries n.e.s.	+5·3	+
701	Railways	+3·3	−
704	Sea transport	+6·5	−
500	Construction	−2·9	−
	Sub total	+37·9	
	Remainder: net	−3·6	
	Total	+34·3	

TABLE N Males: Some structurally significant industries 1966–69

MLH (1)	Title (2)	Str. Comp. ('000's) (3)	Over or under-representation in WMR (4)
101	Coalmining	+2·8	−
364	Radio & Electronic	−3·0	−
381	Motor vehicle manufacture	+5·0	+
	Sub total	+4·8	
	Remainder: net	+2·6	
	Total	+7·4	

Region's structural advantage in the early 1960's. However, in the 1966-69 period the structural effect of these two leading industries, although still favourable, was much reduced and this pattern was generally repeated in other important West Midland manufacturing industries. This was chiefly because although national rates of employment change in these industries continued to be more favourable than average these differences were much reduced to the earlier period.[3] Almost half of the reduction in the structural advantage between the two periods was accounted for by motor vehicles and metal industries n.e.s. (2,000 out of 4,300 a year). In Services, the relative absence of railways and the complete absence of sea transport were significant favourable structural factors in the earlier period but were offset by a general under-representation of many of the faster growing service industries.

Males differentials

13 Tables O and P show industries which significantly contributed to the Region's male differential effects. In the 1961–66 period unfavourable differentials in several important manufacturing industries (motor vehicles, aircraft, and electrical machinery) were more than offset by favourable differentials in construction, some sections of transport and communications, motor repairs and local government. Iron castings and rubber also showed faster than average growth, but in general manufacturing industries showed negative differentials. In the later period the movement to an overall unfavourable differential was chiefly due to the failure of services and construction to continue the faster than average growth of the earlier period. (Since self-employed are not included in the employment data, too much significance should not be attached to the construction

TABLE O Males: Differentially significant industries 1961–66

('000)

MLH (1)	Title (2)	Differential (3)
313	Iron castings	+3·1
361	Electrical machinery	−6·1
381	Motor vehicle manufacture	−6·6
383	Aircarft manufacture and repairs	−4·6
491	Rubber	+3·1
500	Construction	+10·7
702	Road passenger	+4·2
707	Postal services and telecommunications	+4·1
887	Motor repairs	+5·7
906	Local government service	+3·9
	Sub total	+17·5
	Remainder: net	−3·4
	Total	+14·1

TABLE P Males: Differentially significant industries 1966–69

('000)

MLH (1)	Title (2)	Differential (3)
361	Electrical machinery	+1·9
363	Telegraph and telephone apparatus	+3·3
381	Motor vehicle manufacture	−3·7
383	Aircraft manufacture and repairs	−4·8
384	Locomotives and track equipment	−4·8
399	Metal industries n.e.s.	−4·5
702	Road passenger transport	−5·5
810	Wholesale distribution	+2·9
820	Retail distribution	−3·8
899	Other services	+1·9
901	National government service	−2·2
906	Local government service	−3·2
	Sub total	−22·5
	Remainder: net	−5·3
	Total	−27·8

Female structural component

14 In the 1961-66 period, the structure of female employment in the West Midlands was broadly neutral, as shown in Table Q. In the manufacturing sector the unfavourable effect of a concentration of pottery and bolts, nuts, screws etc., which showed a relatively poor national performance, was offset by the relative absence of some of the declining textile sectors. The service sector showed a slight overall unfavourable structural effect, due chiefly to the under-representation on the Region of some of the fastest growing service industries. By contrast, in the 1966-69 period (Table R) the overall structural component was unfavourable (−2,100 a year compared to −400), due chiefly to the heavy national fall in M.L.H. 399, Metal Industries, n.e.s., which is heavily concentrated in the Region. It is also worth noting that in the earlier period, industries where structural effects were not individually significant showed a neutral structure in aggregate. However, since 1966, these remaining industries (comprising of course, the bulk of female employment) showed an unfavourable component.

Female differential component

15 Table S shows that the unfavourable differential component in the manufacturing sector in the 1961-66 period mentioned above was chiefly due to slower than national growth in the electrical machinery, telephone and telegraph apparatus, and motor vehicle industries. Similarly, the offsetting favourable differential in services was due to a few individual industries, notably education, medical and dental services and other services. On balance, the remainder of industries grew slightly faster than nationally. By contrast in the 1966-69 period (Table T) the overall differential change for female employment was unfavourable (−1,800 compared to +900 a year). The majority of industries continued to show unchanged slightly positive differentials, the shift in the overall differential being chiefly due to slower than average growth in motor vehicles, aircraft and public service (national and local government) sectors.

Conclusions

16 As has already been mentioned, the analysis of employment trends in this section cannot provide any deep insight into the underlying causes of employment change in the West Midlands, but some partial insight has been gained in the main test of the Appraisal. Employment changes are symptomatic of the economic strengths and weaknesses of a regional economy, and care must be taken not to draw hasty conclusions which are unsupported by other evidence.

17 For example, we have identified a general pattern of employment in many manufacturing industries growing more slowly than nationally. But we do not know

TABLE Q Females: Structurally significant industries 1961–66

('000)

MLH (1)	Title (2)	Str. Comp. (3)	Over or under representation (4)
393	Bolts, nuts, screws	−1·9	+
412	Spinning of cotton, etc.	+2·3	−
413	Weaving of cotton etc.	+1·7	
414	Woolens and worsted	+3·4	−
462	Pottery	−4·8	+
B74	Medical and dental	−1·9	−
B91	Private domestic service	+3·3	−
899	Other services	−3·7	−
	Sub total	−1·6	
	All other industries, net.	−0·4	
	Total	−2·0	

TABLE R Females: Structurally significant industries 1966–69

('000)

MLH (1)	Title (2)	Str. Comp. (3)	Over or under representation (4)
399	Metal industries n.e.s.	−3·4	+
462	Pottery	−2·3	+
B20	Retail distribution	+1·8	−
891	Private domestic service	+1·8	−
	Sub total	−2·1	
	All other industries, net	−4·1	
	Total	−6·2	

TABLE S Females: Differentially significant industries 1961–66

MLH (1)	Title (2)	Differential component (3)
361	Electrical machinery	−3·4
363	Telephone and telegraph apparatus	−1·9
381	Motor vehicle manufacture	−2·2
872	Educational services	+1·8
874	Medical and dental services	+3·5
899	Other services	+2·3
	Sub total	+0·1
	Remainder: net	+4·5
	Total	+4·6

TABLE T Females: Differentially significant industries 1966–69

M.L.H. (1)	Title (2)	Differential (3)
364	Radio and electronic apparatus	+2·8
369	Other electrical goods	−2·2
381	Motor vehicle manufacture	−2·6
383	Aircraft manufacture and repairs	−1·8
810	Wholesale distribution	+3·2
820	Retail distribution	−4·0
901	National government service	−1·6
906	Local government service	−1·5
	Sub total	−7·7
	Remainder: net	+2·3
	Total	−5·4

whether this was due to a slower than national growth of output, or a faster than national growth of productivity; it may even have been due to 'once and for all' decisions by employers. Particular care must be taken not to draw conclusions for the future from recent employment trends without a fuller understanding of the underlying economic factors affecting them.

18 An important qualification is that significant changes in trend may have taken place within the two time periods examined. Furthermore, we cannot tell directly whether the post-1966 experience in the Region was markedly different from previous economic downswings. Although the technique we have used adjusts for most of the effects of changes in the national level of economic activity, the Region's structural and differential components could be influenced by the rate of growth of the national economy.

19 However, we can draw some broad conclusions from the analysis. Most of the faster than average growth of male employment in the early 1960's was due to the Region's favourable industrial structure, particularly in the metal using industries. Much of this advantage disappears in the 1966-69 period, and it is likely that will this persist in the future since it is unlikely that those manufacturing industries concentrated in the West Midlands will repeat the rapid national employment growth of the early 1960's.[5] Structural advantage is likely to be greatest in regions with concentrations of technology-based manufacturing industries and service industries (such as the South East); the relative absence of these sectors in the West Midlands could mean that the Region's future structural 'base' will be less favourable than in the past.

20 This weaker but probably still favourable structural position could have implications for differential employment changes. In the early 1960's the slower than national employment growth identified in much of manufacturing industry was probably due to the labour shortages associated with low unemployment and high national growth rates. In the future the probable easing of the structural 'pressure' could reduce the need to 'export' manufacturing output and employment.

Notes

1 Department of Employment data for employees in employment are used throughout.

2 The economic variables include aggregate factors such as employment, activity rates, migration, population growth and labour demand, and sectoral factors such as industrial and occupational demand trends.

The shift and share technique

3 The three components of the shift and share technique sum to the actual regional employment

change; they are defined as

i *The national component* is that employment change that would have taken place if the Region had the same industrial structure as nationally, and if industries in the Region showed national rates of employment change. (It therefore has no real meaning for an individual industry).

ii *The structural component* is that employment change over or under the national component change which would have taken place if employment in all industries in the Region had changed at national rates. A favourable overall structural component means that:

   a industries where employment is changing faster than average nationally are over-represented in the Region;

   b industries where employment is changing slower than average nationally are under-represented in the Region;

   or c more usually, a combination of both these effects.

iii *The differential component* is that employment change due to employment in some or all of the Region's industries changing at rates faster or slower than nationally.

The technique allows for the contribution of individual industries to the overall structural and differential components to be identified.

4 A complete data series for the West Midlands at M.L.H. level is not available. Additionally, the large volume of calculations required precluded a more comprehensive evaluation of the available data.

5 By way of illustration, national male employment in motor vehicles grew by 32·7% in 1961-66; national total male employment grew by only 2·3%, i.e. the mean annual relative growth of motor vehicles was 6·1% per annum faster than average, whereas in the 1966-69 period the gap was reduced to 1·7% a year.

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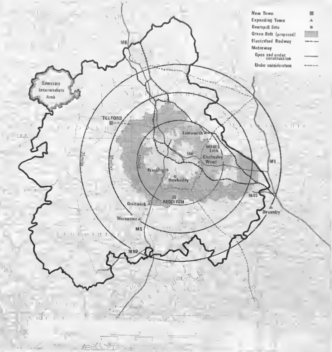
THE WEST MIDLANDS



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